

AMERICAN GAS ASSOCIATION



FEBRUARY
1958



"At the Eden Roc, we wouldn't cook with anything but GAS"

*Sol W. Geltman
Executive Food Director
Eden Roc Hotel*

The lush Eden Roc on Miami Beach is known for its French cuisine as well as dishes of all nations, serving as many as 5000 a la carte meals daily. From their Pompeii Room to Harry's American Bar to room service . . . everything is cooked with Gas.

Sol Geltman, with years of service as an executive food director, and Executive Chef Pierre Bacque insist there's nothing better than Gas for cooking. "There are 99 things Gas does that no other fuel can do as well," claims Mr. Geltman. "The finishing off of good food . . . the glazing of fishes and stuffed lobster. The searing and sealing in of your juices with pan fried steak or liver demands the pin-point control of Gas."

See Playhouse 90 with Julia Meade on CBS-TV. Watch local listings for time and station. Sponsored by your Gas Company and the Gas Industry.



The Eden Roc is equally proud of the tremendous performance of their Middleby-Marshall and Blodgett ovens. Dozens of assorted pastries, requiring different temperatures, are baked daily.

The Gas ranges, rotisseries, griddles and ovens at the Eden Roc are made by Magic Chef and South Bend. And, as Mr. Geltman puts it, "With our Gas equipment we know we have temperatures other than low-medium-high."

If you're not cooking with Gas, call your Gas Company's Commercial Specialist and discuss the economic results you'll get with modern Gas equipment. American Gas Association.



C. S. Stackpole (r.) and Mrs. America present first Gas Industry Builder Award to California's Willard Woodrow

THE 1957 Gas Industry Builder Award, first of its kind to be presented by the gas industry, was given to a Bellflower, Calif., builder last month during the National Association of Home Builders Convention. Willard Woodrow, president of Aldon Construction Co. in Bellflower, received the award from A. G. A. Managing Director C. S. Stackpole and Mrs. America (see cover). Details begin on page 2. . . . The extent to which the gas industry's future depends upon the youth of America was dramatically told at the 1958 A. G. A. Home Service Workshop in Minneapolis. The industry's top home service directors were reminded that we are living in an age of speed and modernity and must point our future sales in this direction. Details on page 6. . . . How year-round gas air conditioning has affected one department store's operation is described on page 12. . . . It's only February, but plans for the 40th annual A. G. A. Convention to be held next Oct. 13-15 are well underway. For an up-to-the-minute report, see page 15. . . . Martin Goland, vice-president, Southwest Research Institute, was asked to discuss the question of what constitutes an adequate research program for the gas industry. We heartily recommend that you read his paper which begins on page 17.

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Industry honors top builder



A beautiful homemaker, a prominent home builder and eleven glamorous New Freedom Gas Kitchens and Laundries stole the show during the National Association of Home Builders' Convention in Chicago the week of Jan. 19-24.

The beautiful homemaker is the gas industry's Ambassador of Good Will, Mrs. Linwood Findley of Arlington, Va., who is known nationally as Mrs. America.

Serving as official hostess to the 30,000 builders and their wives attending the NAHB Convention, Mrs. America spoke before builders' groups on the pride of home ownership and the importance of providing homes planned for family living. She also attended luncheons, participated in the opening-day general session and was interviewed by the press.

The prominent builder is Willard Woodrow, president of the Aldon Construction Co. of Bellflower, Calif., who received the 1957 Gas Industry Builder Award for his outstanding contributions to the home building industry.

The award, first of its kind to be made by the gas industry, was presented to Mr. Woodrow by C. S. Stackpole, managing director of the American Gas Association, on Jan. 21 during the NAHB Short Merchandising Course in the Coliseum.

Mr. Woodrow was selected by a special committee representing gas utility companies throughout the United States. The award is based on builders' advanced methods of production, use of new materials and equipment, and modern merchandising techniques.

His company has built and sold more than 26,000 homes featuring gas equipment in southern California and Arizona, representing a total dollar volume in excess of \$250 million. Mr. Woodrow is widely recognized as one of the nation's top ten builders.

The glamorous New Freedom Gas Kitchens and Laundries dominated the giant Coliseum, occupying 5,200 square feet of space, covering four aisles, to provide a dramatic showcase for 1958 gas appliances in handsome kitchen settings.

Eleven of the 19 all-gas kitchens were designed by leading national magazines. The *Better Homes & Gardens* kitchen proved that a kitchen can be decorative as well as functional. It featured St. Charles steel cabinets in brown birch and gold on pedestal legs to give the kitchen an open, expanded feeling. A built-in Roper gas oven set into a storage wall "paneled" with brown birch fronts (over steel) creates a living-room effect when looking into the kitchen from the dining corner.

"A kitchen that does everything but baby-sit" is the way *Good Housekeeping* describes its feature-packed all-gas kitchen with laundry area. Designed to provide maximum efficiency combined with charm, this 20-foot-wide kitchen includes separate areas for cooking, laundry and dining family activities. A room divider easily converts the family end into a guest room with bath or playroom for children.

An all-gas kitchen with Oriental accents, designed by *Woman's Day*, emphasizes the Japanese idea of built-in leisure and clean-cut simplicity. Grays, black, white, soft persimmon, coral tones and natural caning make up the color palette. Cabinets are all of silver-gray birch by Yorktowne. An attractive dining area is located just off the kitchen, separated by gliding Shojis hung from the ceiling track. A corner of the kitchen includes a compact, efficient sewing area.

A fascinating all-gas kitchen designed by *McCall's* occupied a space 20 by 20 feet. This Early American kitchen is being rediscovered by families all over the country who enjoy



Cong.
R. J.
Mrs.
Charles
all-gas

Mrs. America, the first gas industry builder

award, and eleven New Freedom Gas Kitchens and Laundries

highlight NAHB Convention in Chicago, Jan. 19-24.

BUILDER OF THE YEAR

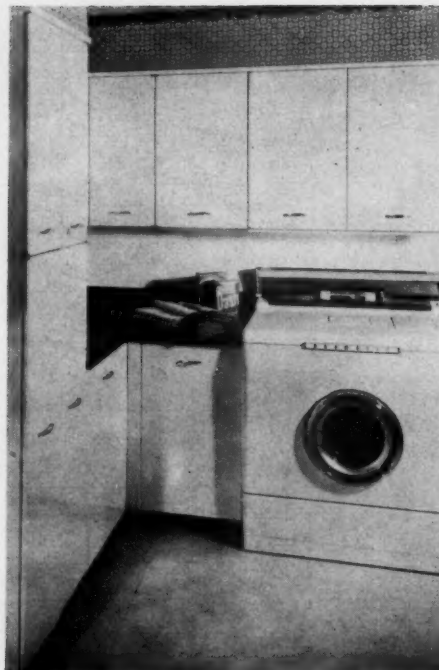


Congratulating Willard Woodrow (2nd from l.) as builder of the year are (l. to r.): R. J. Criddle, general sales manager, builder and contact sales division, Whirlpool; Mrs. America (Mrs. Linwood Findley), C. S. Stackpole, A. G. A. managing director, and Charles Reinbolt, general manager kitchen division, Whirlpool. Above right is an all-gas kitchen in a home by Mr. Woodrow. Below is an exterior view of an Aldon home

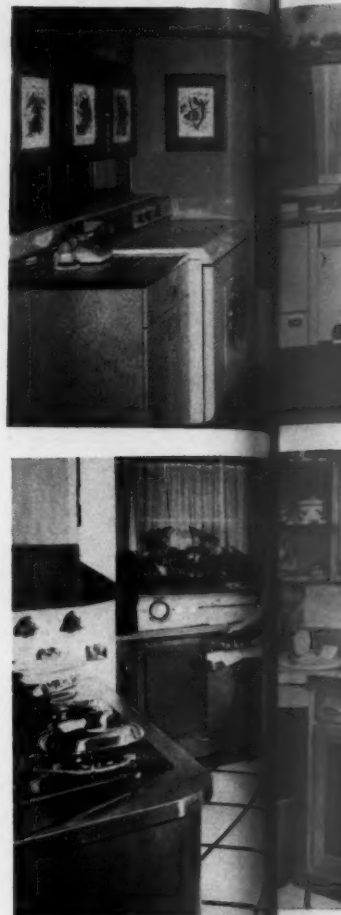




The "Woman's Day" kitchen, cabinets by Yorktowne, Western Holly Kook-Center, at Builder's Convention



"Parents' Magazine" kitchen, Geneva cabinets, Philco-Bendix Duomatic washer-dryer unit



the feeling of warmth and amplexity it provides. Truly "the heart of the home," this kitchen has a wonderfully efficient floor plan which allows for roomy cooking and dining areas and even tucks out of sight (though conveniently near) a modern laundry with washer and dryer and a service closet that holds a gas furnace, hot water heater, and incinerator.

The sun-flooded dining area reflects the warmth and charm of early America in its decorative scheme: the random-width pine paneling, old painted weathervane figure, butterfly and strap hinges, and the simple Cape Cod fireplace add a touch of luxury to winter meals.

Additional New Freedom Gas Kitchens and Laundries were designed by *Ladies' Home Journal*, *Parents'*, *Household*, *Family Circle*, *New Homes Guide*, *House & Garden*, and *American Home*, in cooperation with these participating cabinet and gas appliance manufacturers: Caloric, Maytag, Tappan, Philco-Bendix, Gaffers & Sattler, Whirlpool, Dixie, Cribben & Sexton, Hamilton, Ruud, Roper, Magic Chef, Western-Holly, O'Keefe & Merrit, Rheem, Hardwick, Lennox, Calcinator, American Kitchens, Geneva, Mutschler Brothers, Nevamar Carefree Kitchens, Republic Steel, St. Charles, Wood-Mode, Yorktowne, Youngstown and Mayfair Kitchens.

Builders visiting the unified gas exhibit in the giant Coliseum were enthusiastic about the variety and flexibility of gas

kitchen designs. All of the 1958 gas equipment boasted the latest automatic features, and builders were able to see for themselves the tremendous variety offered by gas appliance manufacturers. With home buyers demanding larger, better-equipped kitchens, builders eagerly visited the gas displays to learn more about the latest trends in kitchen styling.

The gas industry further demonstrated its desire to help builders sell homes through hard-hitting cooperative builder programs. C. S. Stackpole outlined the many aids available to builders today in a 30-minute talk, "Let Your Manufacturers and Utility Companies Help Sell Your Homes." Speaking before a group of 800 builders attending the NAHB merchandising course in the Coliseum, Mr. Stackpole cited a long list of promotional, advertising and merchandising programs which gas companies and manufacturers have developed to assist builders.

Mr. Stackpole used a fictitious home development, "Stackpole Hollow," to illustrate step-by-step the many ways in which a builder could utilize these valuable aids in selling his homes. He pointed out the fact that utilities and manufacturers have invested vast sums of money in preparing promotional material specifically designed to sell homes. Builders using these aids in such areas as southern California, Oklahoma, Texas, Illinois, etc., in cooperation with local gas companies, have proved that they can be of help to them.

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◀ The "American Home" kitchen is above; cabinets by Youngstown, O'Keefe & Merritt washer-dryer combination, Tappan built-in gas oven; below—the "Family Circle" kitchen, Mutschler Brothers cabinets, Gaffers & Sattler built-in cooking equipment and a Whirlpool gas washer-dryer unit



Mrs. America (center wearing black hat) is photographed with directors of NAHB and their wives at the traditional Sunday morning brunch where she was a guest speaker. On her right is George Goodyear, retiring NAHB president. Behind him is new president Nels S. Severin

Highlights of the Builders' Show

● Many of the all-gas kitchens and laundries shown at the NAHB convention will go on tour. The "Better Homes & Gardens" kitchen will be exhibited at a home show in Lansing, Mich., in cooperation with the Consumers Power Co. Cincinnati Gas & Electric may use one or more for salesroom displays and Lone Star Gas Co. of Dallas, Texas, is interested in showing several at their local home show. The "Parents' Magazine" kitchen will be featured this spring at the American Association of School Administrators' Convention in St. Louis and Cleveland and at the Cleveland Home and Flower Show by A. G. A.

● Cabinet manufacturers are emphasizing the "fine furniture" look in their new designs indicating that kitchens are being used more and more for entertaining as well as family living.

● Builders were more eager for advice this year on kitchen planning and "shopped" the unified gas kitchen exhibits in droves. Many expressed the fact that women know what they want and buy only when the kitchen pleases them.

● Real estate editors across the nation picked up the Gas Industry Builder Award story and gave it prominence on their real estate pages.

● Gas companies, in increasing numbers, sent representatives to the NAHB Convention to promote their builder programs with builders from their areas. This is one of the most effective ways of getting the gas story across. Builders welcome this service, judging by the large numbers who visited gas company hospitality suites.

● Ken Muldoon, manager of A. G. A.'s New Freedom Gas Kitchen and Laundry Bureau, reports that he has received numerous calls from gas companies telling him that they have received calls from builders in their areas expressing enthusiasm for the gas exhibits. One builder summed it up when he said: "Gas was everywhere. It was the most impressive exhibit I have ever seen."

● Mrs. America made a tremendous hit with builders who listened to her views on what homemakers want most in new homes. Her naturalness and sincerity won tributes from builders, their wives and the Chicago press.

We're living in an age of speed, efficiency, and modernity, delegates to Home Service Workshop are told

Gas progress depends on youth



(L. to r.): seated—C. W. Smith, Marjorie Chandler, C. S. Stackpole, Betty Morgan, Governor Freeman, G. T. Mullins; standing—J. E. Ratner, Jeannette Ludcke, Marguerite Fenner, Elizabeth Boyle, R. J. Shipway, Margaret McPherson, L. J. Eck, Dr. Stedman, N. Millard, Jessie McQueen



On the "Paul Bunyon" stage at Conference dinner were (L. to r.) front—Jessie McQueen, Mildred Endner, Betty Rush, R. J. Clark, Mrs. Don Hustad, G. T. Mullins; rear—C. S. Stackpole, Margaret McPherson, Mrs. Lynwood Findley, Mary Kimball and George Peipgras

Accent on Youth was the theme of the 1958 American Gas Association Home Service Workshop held Jan. 6-8 in Minneapolis.

Delegates from 158 cities in 36 states and four Canadian provinces heard Mrs. Betty Morgan Rush, chairman, A. G. A. Home Service Committee, in her opening remarks say, "This is the age of speed, efficiency and up-to-the-second modernity. Each day, progress seems to occur at an ever-increasing rate of speed . . . and our utility companies are realizing that the best chance for their progress must lie in putting an accent on youth. . . ."

Mrs. Rush, director, home service

bureau, Baltimore Gas and Electric Co., commended the utility representatives for their interest in young people, and said the industry must be alert to all the young girl scouts, teachers, working girls and young married women. She urged a continued attention to the school range replacement plan as a means of keeping before the students of today and homemakers of tomorrow the picture of modernity of gas and gas appliances.

Symposiums, discussion groups and sales demonstrations provided an opportunity to exchange ideas and air problems of individual home service departments. Evident to newcomers in

home service, who made up one half of the registrants, was the enthusiastic approach of experienced directors toward their jobs.

"Progress as we see it," a symposium of special programs with an accent on reaching young people, opened the workshop. In "Meet the Midday Miss," Marjorie Chandler, Consumers Gas Co., Toronto, described noon hour classes for business girls. Ruth Kruger, Phoenix, Ariz., described summer teen-age classes and a resulting company-wide contest through the properties served by the Arizona Public Service Co. In a paper titled "Home Equipment Workshops for Teachers," Henriette Quilling, Northern

States Power Co., traced a five year program for teachers of home economics in the St. Paul schools. Mrs. Laura Piepgras, Central Electric and Gas Co., Lincoln, Neb., continued the school contact in a description of methods used to interest students in home service as a career and outlined her company's training program for home service on the job.

"Titles in the News—From Hoop Skirts to Missiles" was the theme of a discussion by Evelyn Winkes of The East Ohio Gas Co., on how to arouse the interest of young club women in equipment demonstrations. "Home service is alert to events of the day which can provide titles and content for programs," she said.

"Young Marrieds' Food Habits and Problems" was the subject that closed the first morning's program. J. E. Ratner, director of creative and marketing services, General Mills, Inc., Minneapolis, shared the findings from research done with the young married group. Young married families were described as being 16½ million husbands under 35, the same number of wives, and 33 million children. He said that the young marrieds feel they are weak in the area of planning meals and want help.

The homemakers are concerned about good nutrition but not food described as nutritious. They look for short cuts and ways to save time and effort but do not want to appear as doing things the easy way. Planning meals involves the choice

and Minneapolis Mayor P. Kenneth Peterson, who brought greetings at the Wednesday luncheon. Both were introduced by Gerald T. Mullin, president of the Minneapolis Gas Co.

Home service in the sales picture in the gas industry was accented by two sales managers, A. G. Bur, vice-president of sales, Wisconsin Public Service Corp. and chairman, A. G. A. Residential Gas Section, used an algebraic formula for his paper read at the welcoming luncheon. He was unable to attend, due to illness. Mrs. Rush explained the formula as "visits of home service with homemakers on behalf of all dealers produce sales and good public relations — $HS + HM \times D = S + PR$." Mr. Bur wrote that winning the dealers and the



Home Service Workshop symposium participants were (l. to r.): J. C. ... Karen L. Morsch, Mrs. Alice Buell, Mrs. Anita Noel, ... Henriette Quilling; seated—Marjorie Chandler, Ruth Kruger, ... Peipgras, Mrs. Joyce Carlen, Juanita Luthi, Evelyn Winkes



One hundred and fifty delegates were divided into groups of 25 the second morning of the Workshop to discuss promotion ideas for the new thermostatic top burner. Group discussion leaders were members of the A. G. A. Home Service Committee. The discussions were held for 1½ hours

"For example, in Cleveland, a demonstration was patterned on the Williamsburg festival of 1957, and the background, costume and story featured cooking and equipment of the 18th century compared to 1957 modern gas equipment." Local program chairmen were intrigued by the Hoop Skirt title and there was an overwhelming request from Cleveland club groups for this demonstration.

For the story of missiles, Miss Winkes described the "Whistle Missile" demonstration of Lone Star Gas Co. Rocket terminology was used in pointing up the flexibility and "guided cooking" of modern gas equipment.

of the main dish and then scouting around for other foods that go well with it. They need more help in meat preparation and how to select it in the market. They like cook books but are inclined to follow methods used for years in their own families, he said.

Mr. Ratner closed with advice for continued service to young homemakers in the fields in which they are most interested. He said providing this service is a challenge to his company and to home service people as well. The two luncheons were honored with the presence of Minnesota Governor Orville L. Freeman who, at the Monday luncheon, presented "A Welcome to Minnesota,"

dealers' customers cannot be done without home service as the magic ingredient. "It is your problem to win the confidence and trust of dealers so they will want you to call on their customers, to instruct their salesmen and servicemen, and to conduct store demonstrations for their prospects."

He added that, home economists will find their job with dealers much easier if modern, top-of-the-line gas appliances are connected for live demonstrations on dealers' floors. This will permit group demonstrations of cooking and laundering and the live appliances are a prerequisite to proper training of dealer salesmen and servicemen by utility or factory



Minneapolis Gas members demonstrating a Club Matinee are (l. to r.): Gayle Engedal, Julie Read, Marilyn Johnson



Discussing the workshop meeting are (l. to r.): Marideanne Wolfe, Margaret Douglas, Marguerite Fenner, A. A. Barnhart, Eleanor Morrison. They were among the speakers.



Members of the Registration and Hospitality Committees who helped make the A. G. A. Home Service Workshop for 1958 a success get together for a photo during meeting.

personnel, he said, adding, where the dealer and his employees are properly trained, and live appliances available, many effective sales demonstrations will be made to individual prospects day in and day out.

At the Wednesday luncheon, W. L. Hayes, vice-president of the Montana-Dakota Utilities Co. said that sales and home service complement each other. Mr. Hayes said that for years he has advocated that all gas companies should have an aggressive retail selling organization working closely with an efficient home service department for that combination is the only way to do a creative selling job. He outlined how this program had worked effectively in the properties served by his company. Each salesman is required to call on all company customers in the territory assigned to him at least once every 24 months.

Mr. Hayes said he believed that \$1.00 spent by a gas company on a good retail selling organization and a good home service department will do more to develop satisfied gas customers, to maintain good public relations, and to build and hold the gas load, than \$10 spent in any other way.

C. S. Stackpole, A. G. A. managing director, used as his topic "Gas Industry's Fifth Dimension" at the opening luncheon. He traced the present and future sales of gas consuming appliances and pointed up the development of domestic gas research in many fields particularly with gas air conditioning and house heating.

He praised the promotions of the gas industry television and Mrs. America programs and stressed the various ramifications of the New Freedom gas home particularly in its contacts with home

builders. Mr. Stackpole said that the gas industry truly has a forward look and to stay ahead the vigilance and guidance of everyone in the industry—including that of home service—is needed.

Gas equipment, its promotion, care and operation held an important spot on the program. An afternoon session was devoted to discussion of laundry equipment. Two manufacturer home economists, Mrs. Helen Tangen of the Hamilton Manufacturing Co. and Mrs. Adelaide Fellows of the Philco Corp., discussed two phases of the subject "New Use Techniques and New Selling."

Each outlined ways in which home service could emphasize dryer and washer promotions in demonstrations. Mrs. Tangen stressed ideas for year-round promotions and Mrs. Fellows, after reporting on the increase of sales

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Virginia Montgomery, assisted by Walter Diegre (l.) and Robert Rustvold, gave a dealer demonstration



Special food preparation by Rita Calhoun illustrated features of a modern gas range



Virginia Stacy (l.) and Ann Worden Fitch illustrated a talk, "Showmanship for Demonstrations," with an interesting display

in the washer-dryer, outlined a demonstration on an economy wardrobe that would illustrate features of this laundry appliance.

Margaret Doughty, Dow Chemical Co., discussed "Water Conditioning in the House." She said that since water is the one ingredient that is absolutely essential in laundering, the efficiency of washers was greatly dependent upon the condition of the water. Launderability complaints from homemakers are in the main due to "bad water"—usually hard water. Miss Doughty discussed a treatment of the hard water problem and what could be done with both mechanical and packaged chemical water softeners and conditioners.

Mrs. Anita Noel, Arkansas Western Gas Co., told of a two month spring promotion where dealers selling gas dryers were invited to display equipment

on the gas company sales floor. Through these connected dryers, Mrs. Noel conducted demonstrations to invited club and church groups, with many of the clubs sponsoring attendance in building their treasury funds. Twenty-nine demonstrations were given to 900 club women and dryer sales have shown an encouraging increase.

Discussion groups for a two hour period on Tuesday morning dealt with the subject "Demonstration Ideas on the Thermostatic Top Burner." Discussion leaders were members of the A. G. A. Home Service Committee and each group of 25 received a true idea-exchange of promotions on this new feature of modern gas ranges.

Continuing the approach to sales was a discussion by A. A. Barnhart, East Central division manager, Cribben and Sexton Co., who brought out effective

points in selling gas ranges. He said, "Salesmen must fully know the product and know how to deliver this knowledge." He stressed the importance of voice modulation, a positive approach and an appeal in the product story to the five human senses. He recommended the use of the words *you* and *yours*, getting the prospect into the act and asking questions. Assisted by Patricia Huff of The Ohio Fuel Gas Co., many selling points were demonstrated.

A sales slanted demonstration and a training course for salesmen were presented on Tuesday afternoon in the Minneapolis Gas Co. home service auditorium. Mrs. Rita Calhoun, Portland Gas and Coke Co., demonstrated two ovens, a rotisserie and broiler, preparing a full oven meal and a roast of beef. She broiled Columbia River salmon,

(Continued on page 42)



Front view of Northern Illinois Gas Co.'s new \$500,000 meter shop in LaGrange, Ill.

Northern Illinois Gas Co. opens new meter shop

Conveyor system simplifies transfer of meters from one section of the shop to another



● *Half million dollar business assured*



Most interesting to visitors was the painting experiment. Paint is pumped on a spinning disc revolving at 1,000 r.p.m. Ray Dufour, experimental

Northern Illinois Gas Co.'s new half million dollar meter shop in LaGrange, Ill., helps assure the accuracy of the more than 600,000 meters now being used by the utility's customers.

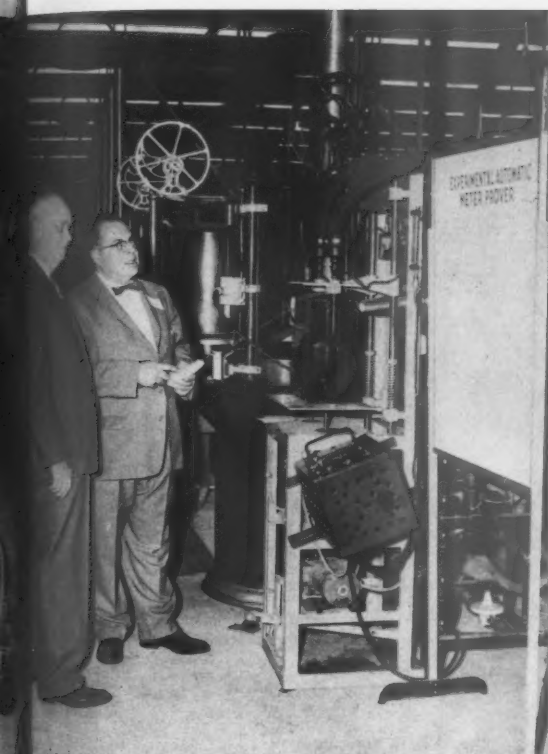
The 20,000 square foot meter shop and office, which opened officially last October with an open house, replaced outmoded quarters in Oak Park and Aurora. Northern Illinois officials said its construction was prompted by the steady increase in the number of customers in the utility's 20-county territory the past few years. They predict their customers may exceed 750,000 by 1965.

Considered one of the most modern

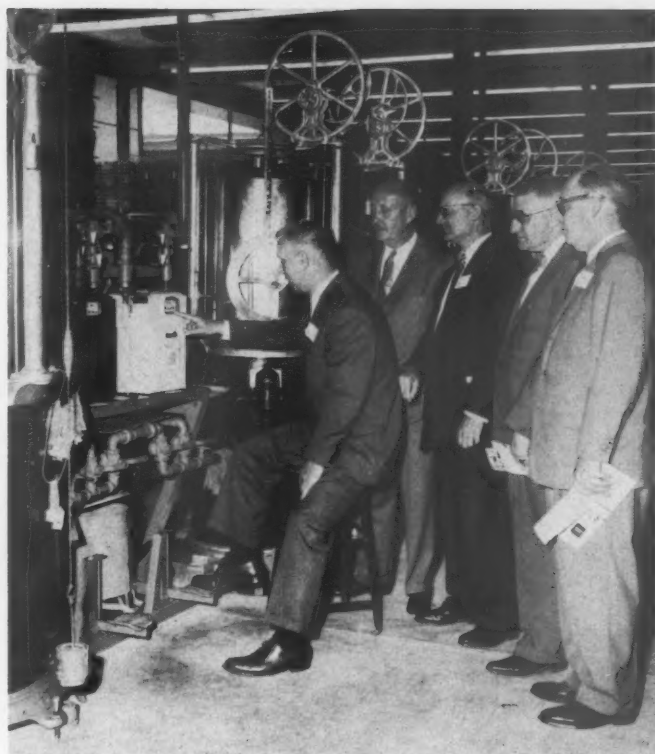
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... assure accuracy of over 600,000 customers' meters



Ray Dufour (r.), Northern Illinois Gas tests engineer, explains experimental automatic meter prover operation to John Schuman



Staff Assistant Ray Voreis explains meter prover to (l. to r.): Senator Arthur Sprague, Marvin Chandler, Harold Gaylord, and Earl Eisenhower

in design, the new meter shop features a conveyor system to carry meters through various operations with a minimum of lost motion. The shop was planned to meet future needs, and will permit processing of more than 175,000 meters annually.

The Illinois Commerce Commission requires that all gas meters be shop checked at least once every ten years which means between 60,000 and 70,000 must be removed from customers' premises annually by the company at the present time and replaced with meters that have met rigid requirements. In addition, about 40,000 new meters pur-

chased each year by the company are tested in the shop before being placed in service.

Meters brought in after removal from service are cleaned, tested for accuracy and repainted before they are ready for use again.

The meter shop is located on an 11-acre site. Of the 20,000 square feet of area, 16,000 square feet is factory space. The balance houses the office, lunchroom, stock room, boiler room and washrooms. The construction is of brick veneer on concrete block with large window areas on the north and south sides.

Other features include a loading dock

with a capacity for two trucks. Grounds are landscaped and fenced and blacktop parking areas are provided. The building is completely air conditioned and yard lighting is provided.

The air conditioning system consists of a 100-ton Carrier gas absorption type unit. This unit is steam operated. A 200-hp Pacific boiler fired by a Ray combination oil-gas burner supplies steam for the air conditioner, heating and process.

Northern Illinois Gas now has more than \$12 million invested in some 640,000 meters. Slightly more than 600,000 are in actual use.



The new May Co. suburban department store as viewed from the west side of the building. Year-round gas air conditioning makes shopping a pleasure for all



Gleaming stainless steel gas hot-top ranges and the fry-pan range stand out in the kitchen of the May Co.'s dining room



Important in meal preparation is the gas-fired boiler which provides steam for the steam kettles and steam chef cooker

*One of nation's largest suburban
department stores near Cleveland, Ohio, installs
year-round gas air conditioning*

Gas conditioning makes shopping real pleasure

Everybody talks about the weather, and some people do something about it. For example, executives of the May Co. department stores installed year-round gas air conditioning in their new multi-million dollar University Heights, Ohio, store.

One of the largest suburban department stores in the country, the four-story structure built on an 18-acre tract will serve Cleveland's eastern suburbs. It is known as May's-on-the-Heights.

Of contemporary design, the new store, built of reinforced concrete with lower exterior walls of textured brick in hackberry red and upper exteriors of glazed white brick, gives every indication of the type of advanced planning that makes shopping both convenient and enjoyable.

A parking area with a 2,000-car ca-

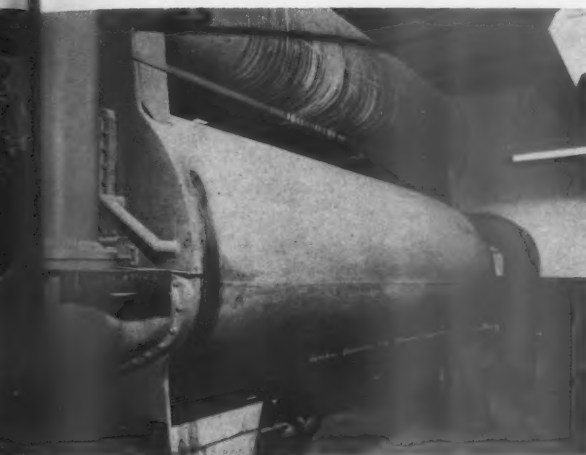
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These two Cleaver-Brooks gas-fired boilers and two 425-ton Carrier absorption units are backbone of conditioning system



Ready for operation is this 425-ton Carrier absorption unit shown in its roof-top penthouse installation at the May Co.



The Mayfair dining room in the new May Co. department store. Like 99 per cent of northeastern Ohio restaurants, the store is served by The East Ohio Gas Co.

capacity surrounds the store. Protected pedestrian walks thread the blacktopped lot, which is on two levels, and lead to the store's six entrances.

A shopper desiring to purchase something in the first floor book department or men's shop might park near one of the first level entrances. However, for milady whose interests at the time might be focused on something in either the women's or children's clothing line, carried on the second floor, a parking spot on the second level would be more convenient.

Sheltering the entire sidewalk area around the west and north entrances is a cantilever overhang, ten feet wide and 26 feet high. Hidden under this canopy are 27 speakers which serenade shoppers with soothing music.

Manifesting this same interest in the

shopper's comfort, located in a 10,000 square foot roof-top penthouse are two Carrier absorption units and two Cleaver-Brooks gas-fired boilers. They are the backbone of a year-round gas air conditioning system.

The installation of the 425-ton absorption units—the largest of their kind in northeastern Ohio and the first to employ hot water as the source of energy—and the two 300-horsepower high-temperature water package-type boilers in the penthouse mark another modern aspect of the building's planning.

With both the heating and cooling equipment located on the roof, all the store's 353,000 square feet of floor space are usable. Space that would have had to be used for the heating-cooling plant in the valuable basement level is now free for merchandising, or money

that would have had to be used to finance an expensive sub-basement for such equipment was saved.

Besides making all possible space available, the penthouse-type installation provides one central area for all equipment, thus aiding operation and maintenance. Both considerations played an important part in the decision of May Co. officials for such a gas installation.

The gas equipment, with no moving parts and thus no noisy vibration, was perfect for roof-top placement.

To distribute the conditioned air, 19 air handling units are located strategically on four mezzanine levels which are used as service cores. Chilled water from the two huge absorption units will be piped to the air handlers where it will run through coils. Filter units clean the air before it passes over the coils to

be cooled and dehumidified. After the air has been processed, it is forced out by a fan.

The system's redwood cooling towers are located outside the penthouse on an adjacent roof of the building.

During the winter, the miracle of the Carrier system is employed—a button is pushed, and hot water is circulated through the coils of the air handlers with the result that clean, humidified, warm air is distributed.

A good indication of the size of the building, and the air conditioning system, is that 100 tons of sheet metal for the duct work and close to 120 tons of pipe were used in the system.

May Co. officials in Cleveland bill the store as "the newest, the largest, the most modern suburban department store in this part of the country." They have much to support this contention. They believe their store has everything. They point to a \$15,000 radar traffic control

system they had developed to avoid traffic congestion on the streets of their neighbors; their own 375,000 gallon, underground water reservoir to avoid over-taxing the storm sewers of the community; an auditorium which has been made available to community groups; and even a specially-designed and decorated children's barber shop.

But probably their proudest, "extra" is the Mayfair Dining Room. Set off from the rest of the store with a modern butterfly roof and a wall of sliding glass panels 28 feet high, the restaurant will serve, like 99 per cent of the restaurants in northeastern Ohio, in the area served by The East Ohio Gas Co., gas-cooked meals.

Backed by a large kitchen with modern gas equipment, the Mayfair Room, which will seat 310 diners, is expected by company officials to become one of Cleveland's most popular eating places.

The sliding glass doors, coupled with

a milk glass skylight which filters light over a solarium, and a courtyard, complete with a 30-foot pool and fountain, gives the room an outdoor effect.

Gas equipment in the Mayfair's kitchen includes a fry-top range, three hot-top ranges, and a broiler, all Magic Chef.

In addition, a gas-fired boiler provides steam for a Steam Chef cooker and four Hobart steam kettles.

Gas also is used in the kitchen of the employees' cafeteria.

The May Co. slogan, "Watch Us Grow," is well-fulfilled as Clevelanders and other Ohioans witness the new May's-on-the-Heights go into operation with emphasis on shopper convenience. Everything from the decorations to the parking facilities to the air-conditioning system—the most modern department store installation in the country—offers strong testimony of the concern the company has for its customers.

Meet your Association staff



John West Jr.

When John West Jr. was working his way through Virginia Polytechnic Institute as a casket upholsterer, he undoubtedly saw to it that his upholstery work was superior to anyone else's. And this has been his attitude toward doing a job ever since. Yet when you call him a perfectionist, he laughs and says "I only tend toward perfectionism."

Four years after this training in "underground storage," he appropriately entered the gas industry, as manager of gas purchase and measurement of Tidal Gas and Oil Co., in Oklahoma. Subsequently, he put his degree in engineering and physics and his post-graduate study in law and business administration to good use as a power plant equipment salesman, an instructor at VPI, and then chief engineer of the Virginia State Corporation Commission.

He joined A. G. A. in 1925, was named secretary of what is now the Residential Gas Section a year later, and in 1942 was elected assistant managing director, the post he still holds at A. G. A.

"I'm the assistant managing director at home, too," he quips. "Home" is an all-gas house in Scarsdale, N. Y., where he lives with his wife,

mother, son, and daughter. His special pleasures are hi-fi—he's built about a dozen sets in the past forty years—and boating—he's spent a good many hours modernizing his thirty-year-old power boat.

At A. G. A. his special responsibilities include supervision of public information, statistics, utilization, and the Washington office. Responsibilities seem to be made to order for Mr. West, who finds fascinating his job's "day-to-day challenges."

"In association work there is often the tendency to let action be held up because of minor hassling," he says, "but I feel that the important move is to get things decided and accomplished quickly." For this reason, many enjoy dealing with Mr. West. One senior staff member says admiringly, "When you go to John West with a problem, you get a straightforward 'yes' or 'no' answer without any fal-de-rol."

Even after 33 years of service with A. G. A., Mr. West likes to think of himself "not as a professional trade association man, but rather as a gas industry man." And as such, he would classify himself as "an industrial missionary, who helps others to help themselves."

U. S. growth convention theme



The General Convention Committee planning 1958 event are (clockwise, starting at left of photograph): A. M. Beebee, H. S. Walker Jr., H. L. Wathen, H. B. Noyes, C. M. Sturkey, Julius Klein, J. W. West Jr., T. H. Kendall, J. A. Cushman, E. C. McGraw, and H. V. Potter

Gas Builds A Greater America.

That will be the theme of the 40th annual American Gas Association convention in Atlantic City Oct. 13-15.

Alexander M. Beebee, chairman, General Convention Committee, said the theme was chosen on the basis of current contributions made by the gas industry to the American public. "We have the fifth largest industry in terms of net capital investment," he said, "and our industry plans to spend an estimated \$2 billion yearly to meet customer requirements."

Mr. Beebee, who is chairman of the Executive Committee, Rochester Gas and Electric Corp., said that along with the parade of New Freedom Gas Kitchens and Laundries, an imaginative display of new developments in gas equipment will be shown at the convention illustrating some of the contributions our industry has made.

Stating that one measure of success of the gas industry is the success of the an-

nual convention, Mr. Beebee said he is confident that the committee will rise to its opportunities and make this 40th convention a memorable one.

He said the over-all theme will be pointed up by individual themes for each General Session and the General Luncheon. General Session themes will be: "What's Ahead?" "Some Problems to Consider," and "Meeting Our Opportunities." The theme of the General Luncheon will be "A Time for Greatness—Making the Most of Our Opportunities."

New pre-registration method

Mr. Beebee announced that a new and streamlined pre-registration method has been worked out this year whereby all persons attending the 1958 convention will be registered in advance. A plan has been worked out with the Atlantic City hotel managers so that applications to the Atlantic City Housing Bureau for

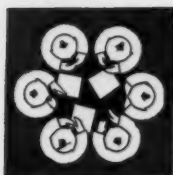
sleeping rooms must be accompanied by the registration fee.

The 1958 convention registration fee will be \$20.00, the same as last year.

Committee members were enthusiastic about the new pre-registration plan. Mr. Beebee cited these reasons for the change to 100 per cent advance registration:

1. For the first time in A. G. A. history, a list of registrants will be available for delegates on arrival.
2. Badges, programs and all pertinent material will be packaged and waiting for delegates when they arrive.
3. Delegates will avoid the time-consuming and resulting confusion of waiting in line for registration that has characterized certain rush periods during previous conventions.
4. Everyone coming to the convention will pay his share of convention expenses.

General Session meetings will be held
(Continued on page 40)



Industrial relations round-table

Prepared by
A. G. A. Personnel Committee

Edited by W. T. Simmons
Assistant to the Personnel Manager
Philadelphia Electric Company

● **Man's greatest discovery**—According to B. Brewster Jennings, board chairman of Socony Mobile Oil Co., "Man's greatest discovery is not fire, nor the wheel, nor the combustion engine, nor atomic energy, nor anything in the material world. Man's greatest discovery is teamwork by agreement."

● **Business operations misunderstood**—Philip D. Reed, board chairman of General Electric, termed the general lack of understanding of how the business system works "almost frightening" and emphasized that wider understanding must be achieved if inflation is to be kept in hand. He declared it the responsibility of businessmen to clear up such misconceptions as the belief of 55 per cent of union members that "most companies can afford to give their workers a 30-hour week with the same regular weekly pay they now receive."

In a recent address before the Public Relations Society of America at Philadelphia, the GE official asserted that wage increases which outstrip increases in production inevitably lead to higher prices, saying "there is an absolute long-run connection." His approach to the situation is to keep wage advances below the equivalent increase in production.

He declares that management has the responsibility in 1958, when important union contracts come up for negotiation, "to see that unit labor costs do not rise again through excessive, and therefore unearned, pay increases."

● **Selling the swing shift**—It's never been easy to sell the swing shift to employees. But, as machinery and processes become more expensive to pay off or more difficult to start up and shut down, the demand for swing shift workers goes up. To help meet this demand the Du Pont Company, Wilmington, recently ran an appealing story in its employee magazine, *Better Living*.

Told with pictures, the Du Pont approach works three ways. It shows:

Relationship of night work to our economy—high-volume, low-cost production, more leisure time, more spendable income.

Glamour and dignity of swing-shift work by comparing night-time worker with others who patrol the night beat—nurses, newspapermen, telephone operators, postal clerks, airport traffic specialists, policemen, entertainers, etc. Effect is to build up an

esprit de corps among those who work at night.

Compensations for shift workers—daylight time for do-it-yourself projects, no crowds to fight at shopping and amusement spots, time for community affairs, time for home and children.

● **Beware the grapevine**—Ever hear sophisticated talk of using the grapevine for spreading plant information? If you are tempted to follow their example, don't. So says Robert D. Breth, Philadelphia communications specialist in his publication, *Quotes Ending*.

People speak of the "grapevine" as a medium of communication. Actually, Mr. Breth points out, the "grapevine" is only a measure of the vacuum that exists in a communication system."

To illustrate this point he cites two surveys: One survey shows that employees name the grapevine as the source of 16.5 per cent of company information. The second shows that only 1.7 per cent of these same employees preferred to receive information via the grapevine.

In effect, Mr. Breth says, "These employees were saying: Look management, 16.5 per cent of us have opinions about the company based on 'secret reports' and 'unconfirmed gossip.' The reason for this is that you have failed to reach us through your other media, or you have failed to print the truth about something we already have a distorted opinion about."

As a serious channel for sending information to employees, the grapevine won't work. There is:

No control over the content of the message once the "leak" is made.

No assurance the message will go to the right people or enough of them.

No way to find the true "mouth" of the grapevine for distributing purposes.

● **Management teamwork and employee understanding**—Four keys to better communication are presented in a book published by McGraw-Hill entitled *Human Relations in Business*. The author is Keith Davis, School of Business, Indiana University. Some call this book outstanding on a subject where many thought nothing new could be said.

Mr. Davis indicates that to communicate effectively you need more than a bagful of techniques. You need a philosophy. Before you decide how to tell your story, you must think about the factors that will affect the reception of your story. Also you must consider how well you are prepared to communicate and how well prepared your employees are to respond. Sometimes there is a tendency to direct the entire communication effort toward employees. Mr. Davis believes that intra-management communication deserves equal emphasis because a supervisor

cannot transmit more clearly than he understands. Types of information affecting employees directly, whether they are managers, supervisors, office workers or shop workers, are of real interest.

● **Flies and honey**—Company rules would be more effective if they were stated, not as commandments, but as existing customs with good reason behind them. That's the advice of Rogers, Slade & Hill, management consultants, New York. They compare two methods:

The old way: "Smoking is forbidden in Department 10. Penalty is dismissal."

A better way: "You can smoke at work anywhere except in Department 10. None of us can take a chance smoking there for this good reason: It's full of solvents that could be touched off by a match or a live butt into a fire worse than gasoline. Such a fire could take your life and the lives of others. It would certainly put a lot of us out of work for a long time."

"In addition, both the state law and the insurance that we carry to protect your job absolutely forbid anyone to smoke there. So watch it. If you light up in Department 10, or carry a lighted smoke there—even absent-mindedly—you can expect to get fired."

This example certainly makes a point for better understanding, less command. It is better communication.

● **Court Decision—Employer can insist on strike vote**—An employer has the right to bargain for a clause that would make it necessary for the union to get approval for a strike from a majority of all the employees in the bargaining unit, according to the 6th CA. Unlike the NLRB, the court considers a strike referendum to be a bargainable subject which can, if urged in good faith, be insisted upon to the point of impasse (NLRB v. Borg-Warner Corp.).

During the course of contract negotiations with an International Union, an employer proposed that on issues not subject to arbitration, no strike could be called unless a majority of the employees in the bargaining unit, both union and non-union, voted by secret ballot on whether to accept or reject the employer's last offer or any subsequent offer. The union negotiator refused to consider this proposal, stating that the union would not accept it under any circumstances.

The NLRB ruled that the employer's proposals were not covered by the statutory requirement for bargaining over "wages, hours, and other terms and conditions of employment," and therefore the union was not obligated to bargain over them. Since they were not obligatory subjects of bargaining, the employer's insistence on them to the point of impasse, even though in good

(Continued on page 55)

An industry perspective from the research planning viewpoint

By MARTIN GOLAND

*Vice-President and Director
Southwest Research Institute
San Antonio, Texas*

When our organization was asked to discuss the question of what constitutes an adequate research program for the gas industry, we were quick to recognize that the assignment represents one of the most challenging tasks ever placed before us. To appraise the research needs of a many-faceted industrial giant with annual revenues in excess of \$6 billion is no simple undertaking.

A principal objective of the research program at Southwest Research Institute is to be of service to the gas industry, and we take pride in noting that a substantial portion of our project effort has been in behalf of the Southern Gas Association, the American Gas Association, and a host of their member companies.

Let us start with the central question of whether a full-scale, costly research effort is essential for an industry which, at present, gives every indication of being healthy, vigorous, and expanding. From this orientation, we shall be able to point out industry weaknesses which exist even in the face of the current compelling customer demand, and we shall be able to delineate some of the areas

where industry-wide research holds the very key to future competitive existence.

For an industry perspective from the research planning viewpoint, let us first, in broad strokes, attempt to assess the present industry position, taking the viewpoint of the research planner.

For the gas utility and pipeline industry, total revenues are currently running in excess of \$6 billion, representing a three-fold increase over the past decade. A variety of indexes well known to you, including the all-important ratio of earnings to plant valuation, could be quoted to show that the industry has enjoyed a brilliant past. Using sound forecasts of future population trends and national energy requirements, the statistician can extrapolate this experience to an equally bright picture for the coming year.

Within the past few years, however, disquieting undercurrents have made their appearance in the smooth flow of industry optimism. The original impetus for the growth of the industry, and still its principal source of revenue, is the mission of transporting and distributing natural gas as a domestic and industrial fuel. Those whose business it is to search the industry's future now see competitive clouds on the horizon which are challenging this role of the gas industry in our society. To turn back, or to weather, this gathering storm, there is a growing conviction that the industry must react with imagination, flexibility, and vigor.

Consider, for example, the area of

domestic service. The principal volume of domestic sales is, of course, devoted to space heating. By the close of 1956, the country-wide market saturation ratio for house heating by gas had risen to 57.9 per cent in the areas where gas service is available, with a predicted ratio of 65 per cent by 1959. The only note of pessimism suggested by these gratifying figures is their uncomfortable proximity to the saturation value for the potential domestic heating market.

Within the past decade, however, the electrical industry has taken the lead in developing air conditioning equipment of relatively low first cost—equipment which has received wide customer acceptance. With almost breath-taking speed, the electrical utilities have been brought to face the problem of a heavy summer cooling load, a load which is supplied from an energy source which permits no off-season storage—full generating capacity must be available to supply the peak demand. With the desperation born of economic necessity, the electrical industry is now attempting to remedy its intolerable plight by invading the space heating market—the same market which the gas industry has claimed for its own.

The Jan. 21, 1957, issue of *Electrical World* contains a 15-page industry report which leaves no doubt as to the intent of the electrical utilities. The attractiveness of a materially increased sales volume and a relatively uniform year-round electrical load is compelling. The

Presented before the eighth annual Gas Company Advisory Council and Management Conference of the Southern Gas Association, Point Clear, Ala., Nov. 18-19, 1957.

obvious goal must be the completely electric home. Already, in many geographical areas, the home owner is being lured to electric resistance heating or the heat pump by special rate schedules which overcome much of the competitive advantage held by gas service.

In the opinion of many well-informed persons, the future of the domestic service area hangs in the balance. The present sharing of the market may well give way to a total victory, with either the gas industry or the electrical industry capturing the bulk of the year-round heating and cooling revenues. Is it pertinent to ask which of the two competitors at the moment has the greatest research and development momentum to decide the issue through further lowered costs and improved equipment?

There is a corollary facet to this problem which also disturbs me. Many of us, I fear, are being lulled into a false sense of security regarding the threat posed by nuclear energy as a source of commercial power generation. The history of science amply shows that progress in a particular field does not enlarge at a constant rate; when research activity is ambitious, advancement can be compared with the snowball, gaining speed and size as it rushes down hill. The next decade or so will undoubtedly see nuclear power generation grow to significant commercial proportions, and with important gains in economy.

The threat of nuclear fuel as an economic competitor to gas is not my only source of concern. You will recall that current thinking suggests that the heat from a nuclear pile will be usefully employed by converting it to electricity for transmission and distribution. Hence, all predictions of the future usage of power show a major increase in the relative role of electricity. This, in turn, will catalyze an even greater electrical research and development effort, aimed at cheaper and more effective electrical equipment, both for the home and the industrial plant.

Once again, the challenge to the gas industry is clear. In an era of technological acceleration, will the industry keep pace? Or will it be outmoded by the in-

evitable changes of the next decades?

It is also pertinent in this discussion to take note of the increasing petrochemical usage of natural gas. As this trend continues and becomes stronger, substantial readjustments may become necessary within the entire gas industry. In taking advantage of the intrinsic value of natural gas as the starting agent in the creation of new chemical wealth, the difficulties of maintaining a competitive position in the fuel area may indeed be exaggerated. How will this, in the final stages, affect the industry investment in pipeline transmission and distribution systems?

It should be clear by now that this perspective view of the gas industry is slanted toward the thesis that the future is by no means secure. Today's technological era is characterized by change—by the breathtaking speed with which scientific and engineering breakthroughs obsolete old practices and replace them with new ones, often of unexpected origin. It is our contention that the knowledge and alertness born of research are vital requirements if the gas industry is to control, rather than be controlled by, the events of the coming years.

Spurred by Sputniks

It is now pertinent to approach the core of the topic assigned to us, namely, the definition of an adequate industry research program. While our sights are fixed on the gas industry alone, I need not remind you that the appearance of Sputniks I and II have triggered an agonizing reappraisal of our entire national research effort. In politics as in industry, we are faced with the realization that survival itself may depend on the quality and quantity of our research resources.

The building blocks for successful industrial research derive from its three-fold objectives—the improvement of existing products and processes, the development of new products and processes, and the enlargement of knowledge to create new fields of endeavor. The process of improving current practice is often given the name of *development*, while the origination of new products and

processes by a directed effort is called *applied research*. *Basic*, or *fundamental* research is research uncommitted to a specific objective; from such work, the product of inquiring and trained minds freed to explore the complexities of our universe, comes the new knowledge and fresh concepts which will control our material destinies. An adequate research program, whether for an industry or a nation, must contain a suitably proportioned mixture of all three of these types of research and development effort.

Viewed from a different point of view, industrial research can be classified as proprietary, cooperative, and basic. Proprietary research is undertaken primarily to improve the competitive standing of an individual company in relation to its neighbors; the results of proprietary research are usually held confidential until their release will not harm the company's competitive position.

The nature of basic research has already been outlined; clearly, the findings of basic researchers must be given free and open distribution in the technical literature. It is worth noting that industry is coming more and more to the realization that it cannot indefinitely deplete our storehouse of fundamental knowledge without helping to replenish the supply, else the cupboard will be left bare. Hence the trend toward industry support of pure research in our universities and research institutions.

Cooperative research falls intermediate to these two types of undertaking. Recognizing their common need for increased understanding in a particular technical area, a group of companies pool their resources and engage in a cooperative effort. Programs directed by both SGA and A. G. A. fall into this category. A splendid example of successful cooperative research is the project of SGA connected with the control and analysis of pipeline pulsations in the vicinity of compressor stations.

If we were to compose an ideal research effort for an industry as a whole, we would undoubtedly reach the conclusion once again that a balance must be preserved among all three types of research effort—proprietary, cooperative,

and basic. The essence of individual company competition is preserved by proprietary research. On the other hand, the cooperative approach avoids unnecessary duplication and waste in solving broad, industry-wide, common denominator problems.

It is my feeling that the gas industry suffers from the fact that a healthy balance along these lines has not been achieved in certain areas of industry concern. In the appliance, space heating and air conditioning fields, for example, which control the domestic utilization of gas, the element of effective proprietary research by manufacturers has been sadly lacking. A limited effort by A. G. A. to counteract this deficiency through cooperative research supported wholly by utilities has not proven entirely successful, since manufacturers have not looked with favor on the adoption of a research idea, no matter how promising, when it is equally available to others.

A specific illustration, familiar to all of us, is the unfortunate situation which arose in the domestic air conditioning field. Here we have a history of too little imaginative effort, undertaken too late. There is every reason to believe that gas-fired equipment would comprise a strong element in today's market if the early train of circumstances had led to a technological race among several manufacturers.

In the absence of this healthy environment, the only alternative left to the industry was to support an all-out cooperative research effort to act as a catalyst to renew manufacturer interest in the field. Within the past year or so, this program has borne fruit, and we can look to the future with renewed confidence. With gas industry support, a most important element in view of the present situation, we can at last hope to realize the real advantages of economical, domestic gas-fired air conditioning.

In contrast to this plea for more proprietary research in certain areas, it

should be pointed out that for the gas industry as a whole, cooperative research will always remain one of its strongest technological assets. Since the industry is largely utility oriented, competition among individual companies is not a major factor. The policy of working together to improve the service offered to the public is thus both appealing and logical.

Finally, I should like to view industrial research by analogy to an investment portfolio. A conservative program can be expected to yield only modest returns. In an era of intense competition, a thoroughly conservative research program will usually prove inadequate. When the element of risk is added to the research policy, again in proper proportion, every project will not yield positive results, but success may be crowned by major technological and competitive advances.

Your industry, which seeks to explore new reserves, excels in the balancing of risks. The search for a new oil and gas field, which may end only in the expense of dry holes, is occasionally rewarded handsomely. Analogously, a research program devoid of dry holes cannot be given the responsibility of bringing in the gushers which open new industrial horizons.

Fuel cell studied

Some two years ago, A. G. A. commissioned our institute to study the potentials of the fuel cell, a device for directly converting the chemical energy of gas into electrical power. Laboratory models of the fuel cell operate at amazingly high efficiencies, in some cases approaching the ideal values, but our current basic research knowledge is inadequate for the design of a cell with long life.

The promise of the fuel cell is not confined to its application as a large, central power generating plant, where its high efficiency would represent a major technical advance. Since a fuel cell can operate with the remarkable power-to-volume ratio of one watt per cubic centimeter, there is the possibility that small fuel cells could supply the

electrical needs of individual homes and industrial plants with striking economy.

Despite the richness of these potential rewards, gas industry research on the fuel cell is limping along under the restrictions of an almost pitiful level of financing. That the program exists at all is due only to the foresight of the A. G. A. staff and their advisers in continuing at least some activity in this area of research.

Whether the fuel cell is a dry hole or a gusher is still problematical. I can assure you, however, that without an adequate research effort, we shall never discover the answer.

The sixty-four dollar question of any discussion of research needs is—how much should it cost? Since research is an exploration into the unknown—a place you cannot describe until you get there—the only resort left is to provide an answer based on experience in allied fields.

I must confess that quoting statistics on research expenditures leaves me unconvinced, much as it probably will leave you, since research is an organic enterprise which grows and expands and meets its needs as new ideas appear and are superseded. Statistics does not, and cannot, take into account the many influences and subtle mechanisms which eventually control research costs in a particular area.

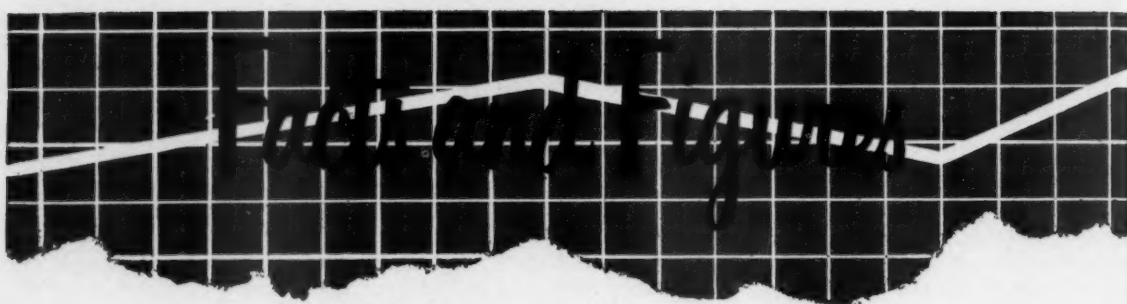
With these important reservations, let us nevertheless briefly relate the gas industry position to that of the average American industrial practice. For this purpose, we shall use an authoritative, if somewhat outdated report of the Harvard Business School* as source material.

For the purposes of this publication, the term *research* is taken to include "basic research, applied research, and development, but—it is limited to technological research and development and therefore excludes such activities as market research, economic research, and similar functions."

For 191 leading companies, the percentage ratio of research costs to sales volume averaged 1.6 per cent for the

(Continued on page 24)

* Dearborn, D. C., Knezek, R. W., and Anthony, R. N., "Spending for Industrial Research, 1951-1952," Division of Research, Graduate School of Business Administration, Harvard University, Boston, Mass., 1953.



Prepared by A. G. A. Bureau of Statistics

Total sales of the gas utility and pipeline industry to ultimate consumers during November 1957 amounted to 6,618 million therms, an increase of 15.5 per cent over sales of 5,729 million therms in November 1956. The increase in the use of gas sales can be attributed to the greater number of new gas customers, the colder weather experienced throughout most of the country and greater use of gas by industrial customers. During November, industrial sales advanced from the 3,227 million therms sold in November 1956 to 3,427 million therms, an increase of 6.2 per cent. This increase in gas sales to industrial users occurred despite the fact that industrial production for November 1957, as measured by the Federal Reserve Board index, was down 4.8 per cent from the same month of last year. The index of industrial production (1947-1949 = 100) for November 1957 was 139, seven points less than the index of 146 for November 1956. The Association's November index of gas utility and pipeline sales is 244.0 (1947-1949 = 100).

During the 12 months ending Nov. 30, 1957, total utility and pipeline sales of gas aggregated 75,245 million therms, equivalent to an increase of 3.6 per cent over the 72,663 million therms consumed in the 12 months ending Nov. 30, 1956.

The Labor Department reported that total housing starts during December were 62,000 units, down from the 78,000 units in November. This decline is a little more than usual for the time of the year, the Bureau of Labor Statistics reported. Total starts during all of 1957 were 1,039,200 units, down 7.1 per cent from the 1,118,100 starts in 1956. Appliance shipments during 1957 naturally have been adversely affected by the housing decline, and almost without exception have reported declines from a year ago.

SALES OF GAS AND ELECTRIC RESIDENTIAL APPLIANCES DURING DECEMBER 1957

(WITH PER CENT CHANGES FROM THE CORRESPONDING PERIOD OF THE PRIOR YEAR)

	December		November		Eleven Months Ending Nov. 30, 1957	
	Units	Per Cent Change	Units	Per Cent Change	Units	Per Cent Change
RANGES (including built-ins)						
Gas	138,100	- 0.4	154,300	- 4.3	1,832,800	-10.0
Electric	n.a.	n.a.	110,800	+ 0.5	1,239,000	-15.0
WATER HEATERS						
Gas	183,800	+17.2	173,200	- 6.1	2,360,700	- 9.4
Electric	n.a.	n.a.	61,000	+12.1	714,400	-12.8
GAS HEATING—Total	52,900	- 0.6	83,700	+ 8.0	968,700a	-11.6
Furnaces	40,200	- 6.7	61,400	+ 6.2	704,200a	-13.3
Boilers	4,900	+14.0	8,200	+ 1.2	99,400a	+ 3.2
Conversion Burners	7,800	+34.5	14,100	+21.6	165,100a	-11.7
OIL-FIRED BURNER Installations	37,163	-15.4	52,258	-19.1	618,589a	-12.8
DRYERS						
Gas	n.a.	n.a.	47,359	n.a.	358,461	n.a.
Electric	n.a.	n.a.	94,304	n.a.	784,065	n.a.

a. Twelve months ending Dec. 31, 1957.

n.a. Not available.

SOURCES: GAMA, NEMA, and "Fuel Oil and Oil Heat"

GAS SALES TO ULTIMATE CONSUMERS BY UTILITIES AND PIPELINES DURING NOVEMBER (MILLIONS OF THERMS)

	1957	1956	Per Cent Change
Month of November			
All types of Gas	6,617.7	5,728.7	+15.5
Natural Gas	6,435.0	5,546.8	+16.0
Other Gases	182.7	181.9	+ 0.4
Twelve Months Ending November 30			
All types of Gas	75,244.5	72,662.5	+ 3.6
Natural Gas	72,968.0	69,475.0	+ 5.0
Other Gases	2,276.5	3,187.5	-28.6
November Index of Monthly Utility Gas Sales (1947-49 = 100)	244.0	211.2	+15.5

PERTINENT BUSINESS INDICATORS, NOVEMBER

(WITH PER CENT CHANGES FROM CORRESPONDING PERIOD OF THE PRIOR YEAR)

	November			October		
	1957	1956	Per Cent Change	1957	1956	Per Cent Change
Industrial activity (1947-49 = 100)	139	146	-4.8	141	146	-3.4
Consumer prices (1947-49 = 100)	121.6	117.8	+3.2	121.1	117.7	+2.9
Housing starts, Non-farm (thousands)	78.0	77.4	+0.8	95.0	93.6	+1.5
New private constr. expenditures (\$ million)	2,950	2,922	+1.0	3,057	3,003	+1.8
Construction costs (1947-49 = 100)	162.9	155.4	+4.8	162.8	155.4	+4.8

A Belden Brick Co. superintendent checks a dependable gas light; below, East Ohio Gas' A. M. Thurston examines a Belden brick at a brick "slicer"



Gas found best for illumination of brick plant

Natural gas is being used for illumination in one of the country's most modern brick plants.

Five gas lamps operate continuously, with a sixth in reserve, to light vital gauges, kiln doors and machinery in the Belden Brick Co. plant at Sugarcreek, Ohio.

The steady, even, white flames of the lamps guarantee illumination at important points in the event of a power failure. They provide assurance that necessary controls can be reached, that accidents won't be caused because of a blackout.

Gas lamps are a unique feature at the Belden plant. But, there is a more important use for gas. Three continuous brick kilns, each one longer than a football field, are fired up to 2,100 degrees, under perfect control conditions, by gas. This perfect control is of prime importance. Gradual heating and cooling are the secrets of successful brick making. It is in this area that natural gas is so important.

Belden turns out about 132,000 bricks a day at their Sugarcreek plant. Rough clay from open pits in the ground is moulded into fine building bricks at such a rate that one day's production laid end to end would reach 20 miles. This clay is ground, screened, moistened and milled to a gray dough. The dough is forced by an extruder through dies which form it into an endless rectangular column, pierced lengthwise with holes that reduce weight.

Then, in much the same way that block butter is cut into little pads in restaurants, rotating cutters slice the column into bricks, 21 at a stroke.

Gas-fired dryer

The "green" bricks then are put on cars and placed in a gas-fired dryer. From the dryer the bricks go to a kiln where they remain for 70 hours, moving slowly all the time.

Ordinarily, when the bricks are removed following their journey through

the kiln, they are all the same color because of the cleanliness of gas. However, some customers ask for darker colors for ornamental work. To accommodate them, raw gas is fed into a controlled heat zone of the kiln. This process, called "flashing," mellows the normally bright red color of the brick.

Production and quality are big words at the Belden Brick Co. plant. And that is where natural gas comes in, for heat, control, coloring—and even illumination.

Belden Brick is representative of many concerns in the large ceramics industry of northeastern Ohio which now use natural gas in their plants. The East Ohio Gas Co., supplier to this district of Ohio, reports that more and more brick and clay tile pipe manufacturers are switching from other fuels to natural gas. A good indication of this is East Ohio's sales volume to the ceramics industry. In 1957, six billion cubic feet will be consumed by the industry. In 1948 the figure was one billion.

Gas is used in infrared car thawing



Gas is used in the thawing of coal at the Toledo, Ohio, Lake Front Dock

Soon after the opening of the Toledo, Ohio, Lakefront Dock, its joint owners, the New York Central and Baltimore and Ohio, formed a committee to study the most effective and economical method for thawing cars of frozen coal. Committee members visited most U.S. car thawing operations.

Steam lance thawing was tried. By 1953 the committee made a recommendation which eliminated the track fires and hand torches which were then standard at Toledo. This was a thawing facility along the track leading to the Neyl & Patterson dumper on the No. 2 dock. Windbreaks extending seven car lengths along this track protected oil-fired torches between the rails and refractory heaters directed at the car sides. The 56 between-the-rail heaters (known as "hot dogs") were installed for two car lengths at the outer ends of the thawing enclosure, heating the cars as they approach the cabinets. The central three car lengths had the car side heaters.

With this installation the dumping rate was almost doubled. This meant

more tons per hour across the dock, less delay to boats, and lower costs per ton handled.

The joint railroad committee continued to search for something still better. Consideration was given to other methods of thawing, and in some cases they were laboratory tested. Indications were that they would be costly and somewhat limited in application. Then, in November 1955, the committee learned of the Schwank gas infrared generator which had then just been introduced into this country.

Produced in Europe

The Schwank infrared generator was patented in Germany after World War II by Gunther Schwank. It was first mass produced in Europe in 1952. It has been introduced in the United States by Perfection Industries of Cleveland.

The device burns gas on the surface of a ceramic mat. The generator consists of a housing which holds the ceramic mat. The mat is made up of eight 1¾

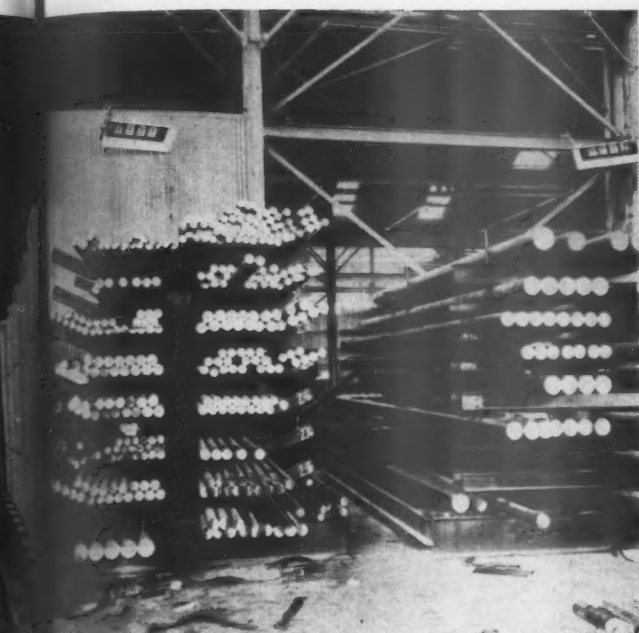
by 2½-inch ceramic catalysts each ¾ inches thick and perforated with 200 holes per square inch. This combination is called a "Rayhead."

Gas is metered through an orifice, passes through an air aspirating chamber and a mixing tube to a chamber under the ceramic mat. This is a 100 per cent primary air burner, and the air-gas mixture burns on the surface of the ceramic at a temperature of approximately 1650 degrees F.

The insulating qualities of the ceramic are such that the surface ¾ inches away from the combustion surface does not become warm enough to ignite the gas in the mixing chamber—i.e., the burner reportedly will not back-fire.

All gaseous fuels can be used. Manufactured gas is burned on ceramics which have smaller holes than those used for natural or liquefied petroleum gas. The first railroad tests and the first permanent installation of this device were made by the Toledo Lakefront Dock Company.

At the request of the railroads' com-



Perfection Industries fabricated special equipment to thaw frozen ore



Gas generated infrared heaters are changing concepts for high bay heating

mittee Perfection Industries fabricated some special equipment for tests at Toledo Lakefront Dock. Experiments were conducted late in January 1956. Though the number of units was inadequate to do a complete thawing job, the tests did succeed in demonstrating the capabilities of this method. On the basis of the tests it was decided to recommend installation of Schwank units to be used initially with some of the oil-fired, under-car heaters previously installed.

During the autumn of 1956 the new installation was completed. A roof was added to the windbreak and 36 gas infrared units were substituted for the oil-fired, car-side refractory heaters. At the same time Perfection has been working on between-the-rails gas infrared units. The entire Toledo dock gas infrared installation is fired with propane gas supplied by a local distributor, and ultimately the entire thawing operation will use only this fuel.

The primary aim of all the work by the joint railroad committee has always been to find methods for increasing the

dumping rate. Elimination of long delays to boats is of prime importance.

Gas infrared has been successful in speeding the thawing operation, and also has been cutting costs.

The new gas infrared installation, according to T. C. Sparks, general manager of Toledo Lakefront Dock, "has resulted in about doubling our dumping rate and reducing fuel costs by about 40

per cent.

Development of a new infrared "hot dog" will add further to the effectiveness and economy of this operation which eventually will be uniformly fed by propane gas. Use of natural gas, or a combination of natural and manufactured gas will effect even further savings."—(Reprinted from March 4, 1957 issue of *Railway Age*)

What infrared is

Infrared rays are waves of electromagnetic energy produced by the sun, by an open fire, and by a heated object. Infrared waves warm the objects they contact, but not the space between the infrared source and the objects. Visible light is electromagnetic wave energy of shorter wave lengths than infrared.

Conventional electric infrared lamps produce "near" infrared wave lengths which are closest to those of visible light. Schwank generators produce "far" infrared from a source which operates at lower temperatures than electric infrared heaters.

Research planning

(Continued from page 19)

year 1951.† Estimates made at the time of the survey indicated that the ratio for the year 1952 would rise to 2.0 per cent. Percentages for industry groupings ranged from 0.2 per cent for food and kindred products, to 13.3 per cent for the laboratory instruments industry. Industrial chemical companies averaged 3.3 per cent of sales for research, while the petroleum and coal products industry reported a figure of 0.6 per cent.

For the same population of 191 companies, the following breakdown of research allocations by objectives is of interest.

To improve present products and processes	49.7%
To create new products or processes	42.3
To support programs uncommitted to specific problems	8.0
	100.0%

The last category above reflects the basic research program of the reporting companies.

As a first approach to the question of how much the gas industry should spend for research and development, let us use the figure of 1.6 per cent of total operating revenues as an indicator of average American industry practice, recognizing that this is a 1951 statistic and hence is probably on the low side. Based

on total gas utility and pipeline industry revenues of \$5,847 millions in 1956, this suggests an R and D expenditure of \$93.5 millions. If 8 per cent of this amount is allocated to basic research, the dollar budget in this category should be around \$7.5 millions.

In discussions with several industry members they warned that quoting research figures of this magnitude would certainly end with the audience discounting me as an impractical dreamer. While I doubt the immediate validity of these research estimates for the gas industry, neither can we avoid the thought that they *do* represent the average practice of American industry for the protection of its future.

Let us now attempt to draw these various thoughts together and formulate principles which can guide the research effort in the gas industry. In simplified terms, three elements are essential for the success of a research program—motivation, execution, and application of the results. The first and last of these are largely management responsibilities; only the second falls directly on the shoulders of the laboratory worker.

The role of management in the industrial research process has only recently been brought into sharp focus, with the recognition that management responsibility extends well beyond the decision to initiate research and the assignment of a research budget. It is my opinion that in most cases where a company or industry research program fails to fulfill its mission, the basic cause can be traced to a lack of sound management planning and administration, rather than to scientific inadequacies.

The point is illustrated by a recent discussion with the president of a large manufacturing company. He cannot understand why his organization's technology is lagging; he has both a research director and a research staff. The research director does not enjoy senior executive rank and authority; the president is quick to point out, however, that the present man could not fill such a post adequately.

New ideas presented to the company management are followed up only rarely; when they are able to elude the research director's caution, others among the company executives will probably argue that they represent an undesirable departure from the company's historical areas of interest. In this environment, what can be expected from a research

program and a research director?

For the gas industry, then, the first task is to develop an educated and liberal management attitude toward research. Along with this education will come an aroused curiosity regarding the progress of new ideas, and only then will management become a vital force in encouraging the growth of a true industry research attitude.

How many of you examine even briefly the research reports as they issue from SGA and A. G. A.? Perhaps you cannot follow the scientific detail—but remember, the essence of these reports contains the future technological destiny of your industry.

Along with increased and realistic management support, let us hope that the amount of research conducted by the gas industry will also grow substantially. The intrinsic merit of proprietary research in certain areas has already been discussed. What can the industry do to encourage a healthy expansion along these lines?

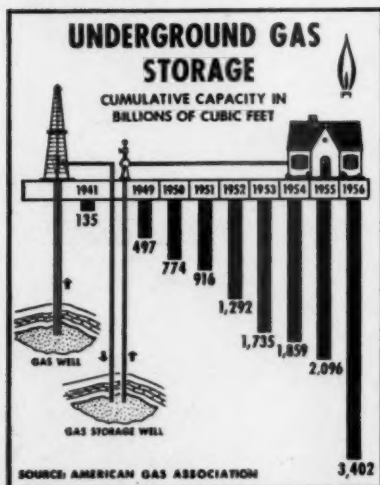
In the transmission and distribution fields, cooperative research continues to hold enormous promise. With the price of gas at the well increasing steadily, only improved efficiency in transportation and delivery can maintain a competitive price at the customer destination. It is sobering to recall that the wholesale price index for natural gas has risen approximately 18 per cent since 1950; within the same period, the electrical index has fallen some 5 per cent.

Finally, let us keep in mind that research cannot be planned on a short range basis. Initiating a project this year often carries an inevitable commitment for financing in the years to come. While every research director periodically appraises his research portfolio, adding promising new ventures and dropping off those which have reached the point of diminishing return, he must have confidence in his ability to administer a stable program, undisturbed by annual financial and policy crises.

In conclusion, the gas industry is currently engaged in a far-reaching reappraisal of its research resources. Most of us, I think, agree that this is worthwhile and necessary. It is my hope that some of the ideas expressed here will help in the building of a stronger, more powerful gas industry.

† Average, rather than median, figures are used here since it is believed they are a better indicator of over-all industry performance.

Increases 17-fold



Increasing numbers of househeating customers are being served as a result of extensive development of natural gas underground storage facilities. Such "warehousing" of natural gas has been increased about 17-fold in the past decade.

*Whether to choose young college trainees
or long-time employees for promotion is major problem*

White-haired or the fair-haired?

By A. D. CHRISTOPHER

*Superintendent
Office Services
Michigan Consolidated Gas Co.*

Management is becoming increasingly concerned with the problem of whether to choose for promotion in our business offices young college graduates, or loyal, long-service employees who may or may not have comparable educational backgrounds. I propose to explore briefly the sources of this problem, then weigh some of the pros and cons involved.

Today's acute shortage of adequate supervisory reserves may be traced to the following:

1. The tremendous expansion of our business organizations, particularly in the past decade.
2. The failure, reluctance, or inability of many industries to hire and train enough young men during the depression period, about 25 years ago together with the very low birth rate during those years.
3. The short supply of suitable young men during World War II. Some benefits have, however, been realized from the war years. Some executives believe that most of the present young supervisory personnel who were in the armed services have matured more rapidly and are able to handle their jobs more efficiently than those who were not.
4. The inadequacy of present programs for training and developing for top positions those men whom we do have.

Such handicaps lay behind the remark once made by Admiral Ben Moreel,

chairman of the Jones and Laughlin Steel Corp.: "When a great president retires, a vacuum is created, and into that vacuum is swept the nearest guy who has not had a coronary."

Where are we going to find our future supervisors—qualified men who not only will be "swept" into positions of



Although the college man has an edge, Mr. Christopher believes the employee of many years is likely to make good

this type but also will serve, in the interim, in lower, though none the less vital, posts in the organization? Supervisors generally develop in one of two ways. Either they are promoted from within your organization or they evolve from a program of putting young college graduates, fresh out of school, into a training program in the hope they will become potential supervisors. In either case, we can only hope that the necessary qualities of a good supervisor will appear, and perhaps our uncertainties re-

specting the young college graduate are greater.

But can't we try to predict, at the time we hire a young man, whether he is capable of reaching management levels? Each of us is limited in his capabilities to assume higher levels of responsibility. Some develop into excellent first line supervisors but are unable to assume the next higher level of responsibility. Do those who later succeed in reaching management levels possess different characteristics, at the time of their employment, from those who do not? More important, is it possible to measure these differences with any degree of accuracy at the time of employment or placement in a training program? These are the ultimate questions to which the answers still elude us.

Nevertheless, as a step toward solution of the problem, it is sound business procedure periodically to review our supervisory requirements. Some of the basic questions we must ask ourselves are:

1. How extensive are our needs? Shall we need 5, 10, or 20 key men in the next five years?
2. What qualities do we require? For example, what personal traits are we looking for, and in what order of importance? We shall probably consider leadership qualities, progressive ideas, creative thinking, management viewpoint, decision making ability, health, intelligence, resourcefulness, experience, knowledge, loyalty, dependability, the ability to get along with people, etc.
3. How many white-haired meet our requirements? Does experience clearly outweigh youth, vigor, and idealism on certain jobs?
4. Are there enough potential super-

visors to meet our needs? If so, do we need a program to assure and accelerate their development? If not, can we find enough black-haired from the rank and file to complete our quota?

5. If we are still short, what then? Dare we lower our standards for certain jobs?

6. What can be done to erase or minimize the fair-haired tag? Can the same program serve for both the white-haired and the fair-haired? Can you clearly demonstrate that you select the best man from your development program? Should you give the nod to the white-haired, where other considerations are equal? Can we hire young college graduates and others directly into our organizations as rank-and-file employees for a year's observation before they go into an accelerated program for development, and then let them go if they don't make the grade?

In all probability there are other questions to be added, but these are, in my opinion, quite essential.

Let us first talk about the young potential trainees within our companies. How do we go about finding them? One of the most common and reliable methods, I believe, is to go to the department heads to seek their help. Do they have persons in their ranks whom they would like to recommend for the training program?

Usually the evaluation for this purpose is made by the immediate supervisor, followed by interviews and appraisal by two or more persons, all from a higher management level; before an applicant can be accepted for the training program, all interviews must concur in their appraisals.

I know that this practice is followed in other companies, as well as ours. When we find men in our ranks who have both the potential and the desire to assume increasing responsibility at various levels of management, we are responsible for providing them the opportunity to enter the training program.

Promotion from within very definitely tends to build employee morale, as most of us will undoubtedly agree. Promoting an employee who has been with you 10 or 15 years and is well liked by his fellow workers has a very favorable effect on the entire working force.

Take an employee who is loyal, industrious, conscientious, cooperative and dependable, but lacks the minimum

educational background (probably some college training) which we believe is necessary if a person is to succeed as a supervisor. For this reason, and possibly because some of us have felt that on occasion he has demonstrated either a lack of aggressiveness, or even too much aggressiveness, we have sidetracked him several times.

Now, have we jumped to conclusions? The employee's record indicates that he has done a very good job on any assignment given him. His loyalty towards the company, enthusiasm for his job, and breadth of experience on different operations make him a very desirable person to have around. He has received wage increases quite regularly because of his fine performance, yet we haven't seen fit to promote him.

Shouldn't this man be given an opportunity to enter the training program? The job rotation method will give a number of other supervisors and department heads a chance to appraise his ability. And then, too, the periodic appraisal and observation which are customary in the training program will certainly reveal whether our selection has been sound.

Explanation needed

We will know whether a trainee is satisfactory, has a very good potential, or will fail. In most cases he will be successful, but occasionally one will be included in the program who won't quite measure up to our standard for supervisory employees.

If, however, after considering these factors, we still feel that this employee doesn't measure up to the standard of our supervisory training program, just what do we tell him, especially if we have meanwhile selected a young college graduate for the training? Although unpleasant, only a complete explanation is the fair procedure with the unqualified employee. (Incidentally the possibility of this result should have been most clearly explained to the candidate at the time his possible enrollment was being discussed.) What effect do you suppose this will have on his immediate supervisor who recommended him, and on his fellow workers who have worked with him a number of years? Obviously, his supervisor as well as his fellow workers will feel that unless a person has a college degree, he just doesn't have a chance for promotion. This sort of attitude perhaps can

destroy a person's incentive to continue performing to the very best of his ability.

Having convinced ourselves that there just isn't anyone in our ranks who can qualify for our training program, we must resort to outside assistance. Then we hire college graduates for this program. But doesn't this hiring of college graduates to go directly into supervisory training programs have the serious weakness of setting aside some "fair-haired boys" and by implication tend to exclude all other employees from the opportunity to progress into the supervisory group? Does this not often have a disastrous effect on employee morale?

In all probability, this result can be avoided if companies make a conscientious effort to keep two roads open, and offer opportunity for training and promotions to both men in the ranks and college graduates. Experience has proved that the mortality rate with college graduates is high because either their interests haven't really jelled or their lack of experience in an actual job situation makes them easy prey to what seems to be greener grass on the other side of the fence.

It has been said that college-trained men stand a better chance of promotion than men without college training. While this may not have been true 20 or more years ago, it seems to be increasingly evident among today's generation. One occasionally hears the remark that it's desirable to have a fresh point of view brought in. But how does this person "stack-up" against an employee of 10 to 15 years service with the company? Is he as graciously accepted? Is he made to "feel at home" by the people assigned to train him? After spending \$15,000 or more to train the young college graduate, what assurance do we have that he will stay with us? Some industries offer rather fantastic salaries to certain college graduates, especially those in technical fields.

We at Michigan Consolidated have lost several good potential supervisors in the college graduate category after two or three years of training. But we have not suffered this blow in cases of upgrading from the ranks. We know that not all college graduates succeed, and, too, that not all who succeed are college graduates. In addition, we know that it takes many years to develop good executives.

Many large organizations today
(Continued on page 38)

Nation's gas leaders to hold annual conference in Washington, D. C., March 31, April 1-2

Long-range view for management

What will be the manpower demands of our changing gas industry during the coming decade?

Is nuclear and solar energy a threat to our industry—or will they give us new gaseous fuels for our distribution and transmission lines?

What are the prospects for a continuance of American prosperity, and can we foresee and overcome possible hindrances?

These are some of the long-range problems to be discussed at the 4th annual General Management Section Conference, according to the advance program just released by Marvin Chandler, Section vice-chairman and chairman of the Arrangements Committee. The conference, with John H. Wimberly, Section chairman, presiding, will be held at The Shoreham Hotel, Washington, D. C., March 31, April 1 and 2.

Other General Session subjects will deal with management topics such as marketing research, financial management, and scientific inventory control.

General Session luncheons will be held on Monday and Wednesday.

Robert W. Otto, president, American Gas Association, will preside at the first, and C. S. Stackpole, A. G. A. managing director, will speak on the topic, "The Gas Industry, Today and Tomorrow." The final luncheon on Wednesday will hear Richard Harkness, radio and television news commentator, speak on "Behind the Scenes in Washington."

An innovation on Tuesday, April 1, will give conference delegates the choice of attending one of three luncheons. The Committee on Economics will sponsor a luncheon with Scott Hughes, senior



J. H. Wimberly, Section chairman, will preside at meeting



Marvin Chandler is chairman of the Arrangements Committee

vice-president, Southern Union Gas Co., speaking on "Economic Implications of Gas Air Conditioning." His presentation, based on an analysis made by the Committee on Economics, will be followed in the afternoon by a panel discussion on the same topic. Representatives of four General Management Section standing committees will discuss gas air conditioning from the point of view of their respective committees. Charles H. Gamble Jr., chairman, A. G. A. Task Group for Air Conditioning, will discuss current research developments.

Another Tuesday luncheon will hear James N. Mosel, department of psychology, The George Washington University, speak on "Testing and Training for Accident Prevention." This luncheon will be sponsored by the Accident Prevention, Insurance and Personnel Committees.

The third Tuesday luncheon, sponsored by the Purchasing and Stores Committee, will have S. Lloyd Nemeyer, president, Milwaukee Gas Light Co., speaking on performance standards for a modern purchasing department.

William Parker, formerly head of Ketchum, MacLeod and Grove marketing research department, will speak at the Monday morning General Session on "Marketing Research: A Guide to Management Decision." He will discuss the application of marketing research techniques to gas utility management and will illustrate his talk with specific examples from gas utility case histories.

Dr. Martin A. Elliott, director, Institute of Gas Technology, will be the final speaker Monday morning. He has chosen as the title of his presentation, "Today's Frontiers of Science Point to Bright Future for Gas Industry." He will show that the gas industry is in an

excellent position to take advantage of developments in the conversion of nuclear and solar energy because, unlike many forms of energy, gas can be stored and distributed at a minimum cost. He will discuss specific areas of application of these energy sources to gas production as part of a broad problem of conversion of all forms of energy into gaseous fuels.

The importance of scientific inventory control to management will be the theme of W. Evert Welch, corporate consultant—inventory management, Minneapolis Honeywell Regulator Co., who will be the opening speaker Tuesday morning. Mr. Welch will discuss the broad principles of inventory control improvement and the function inventory plays in management.

The business outlook both short and long term will be surveyed by J. Philip Wernette, professor of business administration, University of Michigan, who will be the final speaker Tuesday morning. A distinguished economist, educator and financial advisor, Dr. Wernette is the author of numerous articles and several books, the latest entitled, *The Future of American Prosperity*. He taught at the Harvard Graduate School of Business for 18 years, became president of the University of New Mexico in 1945, and in 1948 joined the faculty of the University of Michigan.

Financial aspects of gas industry management will be discussed by L. S. Reis, head of Reis and Chandler, Inc., who will be the first speaker Wednesday morning. Mr. Reis will cover current developments in the financial field and discuss some of the problems and methods of financing a gas company, including the company investor's point of view. Mr. Reis' firm acts in an advisory capacity for a number of utility com-

panies, and is retained by insurance firms, investment banks and a major New York bank for consultation on utility investments.

"The Changing Gas Industry: Manpower Implications," is the topic of Eli Ginzberg, the concluding General Session speaker. Dr. Ginzberg, director, Conservation of Human Resources, Columbia University, is one of the country's outstanding experts on national manpower problems. He will identify the major manpower implications inherent in the recent rapid expansion of the gas industry and will point out the actions and adjustments that the gas industry must undertake to assure itself a fair share of the nation's manpower resources for the decade ahead. In addition to his duties as professor of economics at Columbia University, Dr. Ginzberg is currently serving as advisor to the Secretary of Labor and the Department of the Army. He is the author or co-author of more than a score of books; the most recent is entitled *Effecting Change in Large Organization*.

As is customary at the General Management Section Conferences, a portion of the time is allotted for open committee meetings. During the three afternoons, meetings will be held by the Accident Prevention, Comparison of Competitive Services, Financial Management, Insurance, Personnel, Purchasing and Stores, and Rate Committees.

While all committee meetings are open to interested observers, a number of the committees are, at the request of the Arrangements Committee, presenting program-type meetings. The Purchasing and Stores Committee will present a full program of reports and special presentations on both Monday and Tuesday afternoons. As mentioned above, Mr. Nemeyer will speak at a Purchasing

and Stores luncheon on Tuesday. Another guest speaker, Stuart P. Osborn, comptroller, Texas Eastern Transmission Corp., will address the Tuesday afternoon session on the subject, "Purchasing and Stores Team Work: The Executive View." The Purchasing and Stores group will tour Bethlehem Steel's Sparrows Point Plant. A bus will leave the Shoreham at 2 p.m., Wednesday.

On Monday afternoon the Personnel Committee will present two reports of general interest; those of the Committee on Supervisory Testing, and the Task Committee on College Recruiting. In addition, Dwight S. Sargent, personnel director, Consolidated Edison Co. of New York, Inc., will discuss "Flexible vs. Compulsory Retirement Policies; Some Economic Values."

The Rate Committee will meet Wednesday afternoon. "Recent Regulatory Actions—Their Implications for the Gas Industry," will be the topic of Robert S. Quig, rate manager, Ebasco Services Inc. Daniel Parson, director, A. G. A. Bureau of Statistics, will discuss the long term outlook for energy demand and the use of gas.

A program of entertainment for the ladies is being arranged for Tuesday. Tentative plans are for the ladies to have luncheon at the Iranian Embassy, with a brief tour of the Islamic Center and the Washington Cathedral, followed by tea at another Embassy. Transportation will be provided.

Members planning to attend the General Management Section Conference are urged to make their hotel reservations at once. They may be made by communicating directly with Philip A. Hollywood, The Shoreham, Washington 8, D. C., or with the secretary, General Management Section, A. G. A. Headquarters, 420 Lexington Ave., New York.

Singer Pat Boone builds gas restaurant in Denton, Texas

TELEVISION and recording star Pat Boone is building a new restaurant, designed to seat 200 people, in Denton, Texas. The restaurant, all gas except for air conditioning,

uses gas for ranges, coffee urns, toasters, water heating and heating.

Plans include Pat Boone's appearance at the restaurant's opening this month, and his

appearance at North Texas State College on the same day.

Manager of the restaurant is a Denton resident. The area is served by Lone Star Gas Co.

Wisconsin Public Service to celebrate 75th anniversary

WISCONSIN Public Service Corp. will celebrate its 75th anniversary this year. The utility, which serves a 10,000 square mile area, was incorporated under the laws of the state of Wisconsin on July 17, 1883, as the Oshkosh Gas Light Company.

The name of the Oshkosh company was changed to the present corporate title in 1922, when a large number of small operating utilities were merged into the newly-formed Wisconsin Public Service Corp.

No records are available to indicate the

total investment in the original Oshkosh Gas Light Co., but in 1922, Public Service had plant and property valued at \$16 million. Today, the total invested to bring modern electric and gas service to customers in this area has reached \$144 million.

Keep your commercial customers



By JOHN S. McELWAIN
General Sales Manager
The East Ohio Gas Company
Cleveland, Ohio

When we discuss revenue in the gas industry, we customarily divide it into three parts: residential, industrial, and commercial. And when we do the dividing, we generally end up in an argument about the relative values of these parts.

You have no doubt heard many discussions as to the comparative merits of residential load versus industrial load, and you probably have agreed with one viewpoint or the other, depending on which side of the fence you happened to be sitting on at the time.

The residential and industrial parts of our business call for discussion because they are so active, because they have glamour, because they stand out so prominently. They rise and fall with economic trends and are so noted in newspapers and business magazines. On the industrial side, new products are developed, new plants move into the area. Area development councils are constantly checking to see if they can bring new industry into the area.

On the residential side, new housing developments spring up over night. Exhausted and devaluated areas of cities are demolished and rebuilt with area development plans. New towns suddenly appear around new industries. The activity is exciting. Residential appliance business develops new products, new models and generally reaches a high pitch of competition with our electric counterparts.

Out of nowhere, beginning in the 40's, the residential space heating business climbed to fantastic saturations so that in some areas companies are now serving 85 to 90 per cent of their residential customers with space heating gas. Much of this business fell into our laps because of the relative low cost of gas when compared with its competitive fuels.

The point I am making is that everyone spends his time discussing the industrial and residential parts of our business. No one argues very often or asks many questions about the third part of our business: commercial. Our commercial business has changed little over the years except to grow. It has had great growth, but few people can tell you how large that growth has been.

Editor's Note—This paper has had such impact on the minds of our industry's leaders that the A.G.A. Board of Directors has requested that it be reprinted and distributed to all member company presidents for top level review.

It has little glamour. The changes in the nature of this commercial business have been mainly a matter of definition. Originally the business consisted principally of restaurants and hotels, but other enterprises have been added. Depending upon the rate structure, the location in the country, or some other totally unconnected reason, such businesses as laundries, bakeries, tire recapping establishments, apartment houses, schools, churches, or commercial buildings may be defined as commercial business according to the tastes and prejudices of the company that is doing the defining.

As a result of all this, the commercial business has been calmly appreciated, totally unsung, and generally ignored. The heart of our commercial business is concerned with large volume food cooking and preparation. This business may be located in a restaurant, institution, club, factory cafeteria, school, church, or a small independently operated bakery.

We have always taken this portion of our commercial business for granted. We have accepted it as something that is our due. In many cases we have done little to get this business and even less to encourage it. We have generally not even recorded it. I would venture to say that very few of you could return to your companies and get, from existing records, the exact volumes of gas you are selling to food preparation centers for food preparation.

Despite this general attitude, we still do have this business. Our competition has made inroads in some parts of the country with the commercial electric range, the electric fryer, and the electric bake oven; but generally they have been less successful with these annoying devices than they have been with their domestic cousins, the household electric range and the electric dryer. Competitive restaurant owners who must render good service, supply fine food, and do both of these at a profit, accept commercial gas cooking in most cases as the best method of doing a difficult job.

The fact that we still have the business is something for which we cannot take much credit. The reasons have been bound up with comparative costs and with long-time habit. A husband may say, "My wife does the cooking, and if she wants electricity, that's OK. It only costs a few cents more anyway." But the average restaurant owner is struggling to make a profit on a small margin, and he can't afford to ignore those "few cents"

and pamper the whim of a chef who wants electric cooking.

Fortunately, few chefs want it. The average chef has been accustomed to cooking with gas. If he is a good chef, he is a creative artist, and that means he is probably somewhat temperamental. He has enough problems with his sauces and roasts without trying to adapt himself to a new and different piece of equipment or method of cooking.

It would appear that we can draw the following conclusions. The commercial load is good, stable business to have. It hasn't been a hard business to get and we really haven't had much trouble holding it. Therefore, let's just coast along and not borrow trouble.

Let's establish one point immediately. *Commercial cooking is not just good business to have—it's probably the best business you can get.*

First, it is generally sold at the top rate. Therefore it is one of our top revenue producers per Mcf.

Second, it is a constant, non-peaking load. People eat just as much and just as often in July as they do in January; and today, with air conditioning, they eat out just as much in August as they do in April. Gas for commercial cooking is sold 365 days a year, and usually it is sold with a relatively equal pull through the daytime hours.

Third, most food preparation centers are generally situated in populated areas. A distribution system exists. You don't have to build fantastic line extensions to get the business.

Finally, the tools of commercial cookery—the gas-designed cooking equipment of today—are produced by many sound and solvent manufacturers. The equipment is being constantly improved and re-designed to make it more competitive with electrical cooking equipment, both in cost and in performance.

In short, this business is too good and too valuable to lose. I know of no faster or more certain way to lose it than by concluding, in a spirit of complacency, that we cannot lose it. When that happens, we will wake up some morning to discover that the opposition has been in the house and has ridden off with the family fortune.

Our electrical competitors are scheming hungrily for all forms of base load electrical business. They, too, are in the business of supplying energy, and if this commercial cooking load is profitable for us, it certainly must be profitable for them.

The answer, as we see it, is to take the same basic step that first occurs to any prudent business man who wants to hold business that is threatened. It is the secret of protecting any business, not just gas business. I am talking about service.

In commercial cooking sales, there is service—and service. You can try to do as little of it as possible, and do it in a half-hearted manner with casually trained personnel whose real responsibilities lie elsewhere.

Or you can depend upon the manufacturer of the equipment to do it—maybe. Or you can turn it over to a service company in your area. Some of these companies do a fine, conscientious job, some give the work a lick and a promise, and others do a poor job. But in any event these companies are interested in service and not in sales.

On the other hand, you can provide service with trained specialists on your own payroll. You can act as though every concern of the restaurant manager or institution head is your own concern. You can let him know that his business is something you want and can't afford to lose. This is the way my own company does it, and this is the program I want to describe.

Holds commercial load

Our program has paid off. We are holding more than 95 per cent of our commercial load from year to year. The major institutions and restaurants in our area cook with gas. There may be an electric fryer here and there, but basically the accepted method is gas.

We attribute this record to our commercial sales and service organization. This set-up is available to any gas distributing utility. It can be introduced without great cost into any company's operating department and sales department.

Our food service policy is built around the following practices.

First, we don't use general customer service men for restaurant and institutional service. Instead, we build a man who is an expert in commercial cooking. After we have him trained, we don't limit him to adjusting the air shutter on a couple of top burners. He is set up so that he can completely service the equipment, adjust thermostats, replace valves, and do other minor mechanical service on the equipment.

He is also kept abreast of new developments and improvements in commercial equipment. His continuing education is accomplished at the regular twice-a-month meetings of the sales force with the service force, by attending service schools frequently, and by working on actual demonstrations with new equipment.

This service is rendered free of charge.

Perhaps you would not have enough commercial work to keep this man busy 40 hours a week. In that case, we suggest that you let him spend his extra time on residential service or some similar occupation, but at the same time make his principal and primary responsibility the servicing of the commercial business in his area.

Second, we don't wait for the commercial customer to call us in for service. We have established a pattern of service requirements for all of our commercial customers. We schedule every commercial cooking establishment for a periodic call, depending on type and size.

We recognize that the bar with a hot plate doesn't need a service call every 30 days. We do feel, however, that it will do us a lot of good, and not take too much time, if our customer service man looks at that hot plate every six months, or at least once a year.

On the other hand, we do feel that the kitchen in the principal hospital or in the leading hotel warrants our attention at least once a month. The gas equipment installed in either of those kitchens probably cost between five and ten thousand dollars. The gas load is substantial.

To be more specific, our schedule calls for one group of institutions and restaurants to be serviced every 30 days; the second group to be serviced every 90 days; the third group, every six months; and the fourth group, once a year.

One point to remember in this connection is that the frequent service call tends to reduce the extent of the service actually needed. When you check an installation every 30 days, you correct small failures before they become major catastrophes. The first call, to be sure, may run into some time and straightening up, but those which follow it are generally much simpler as a result of good work already performed.

Third, we believe that there must be a commercial salesman or commercial technician in the sales department who

(Continued on page 40)

El Paso Natural Gas executive outlines basic principles of types of equipment used in machine calculation

Calculating measurement charts

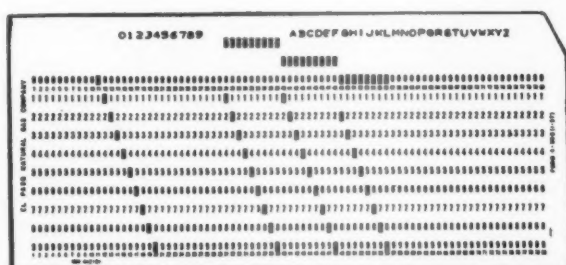


Figure 1

By WHITNEY E. McDOWELL

*El Paso Natural Gas Co.
El Paso, Texas*

In July, 1955, the El Paso Natural Gas Co. applied punched-card accounting machines and methods to their calculation of gas measurement charts. The scope of this paper will be to explain the method of EPNG's machine calculation, including the inter-departmental relationships and controls required to effect an efficient operation.

It will be assumed, herein, that the reader has no prior knowledge of punched-card methods or machines and the writer will endeavor to outline the basic functions and operating principles of the various types of machines used in this operation.

It shall not be inferred or implied that these formulae, methods or machines are the only ones available which will yield the required solution.

The IBM card may be thought of as the source and/or ending document by which the various types of machines receive their input and/or emit their output. The card dimensionally is approximately 7" by 3" and has 80 vertical columns into which holes may be punched to represent numeric or alphabetic characters. Figure 1 shows a punched card and the numbers, letters and characters that the holes represent to the machines.

The IBM accounting machine or "tab" as it is commonly known is a printing and accumulating machine, the primary

EL PASO NATURAL GAS COMPANY

Station	30 - 036 - 02	M9217	Sect. No.
Location	CACTUS STEAM PLANT		
Line Size	10"	14,900	Press. Base
Orifice Dia.	6.250		
Contract With	SOUTHWEST PUBLIC SERVICE CO.		

Header Code	Month, Const.	Coefficient	Fa Fc	Fa	V3	Fav	ACP
3003602	447	9794 000	9808	10006	9913	10070	15986

EPNGC No. 1 Form ABC 414

285 075

Chart On	7-15-56	.19	or	9 Hr 30 Min	AM
Chart Off	7-16-56	.19	or	9 Hr 30 Min	AM
Remarks:					

Signed *J. M. Chapman*

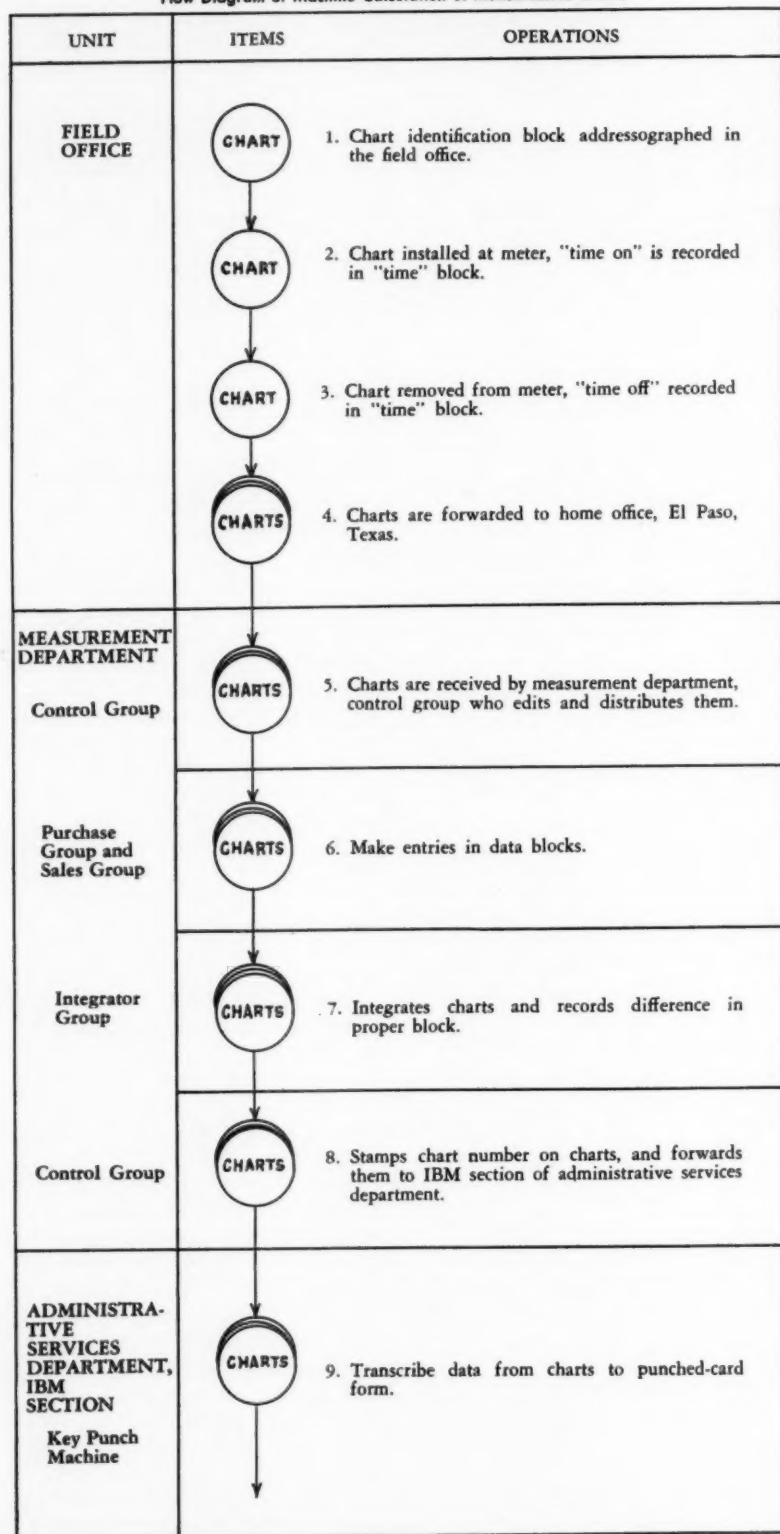
Date	Temp	Bar	Hours	Days	Press. Gauge	Orifice, I.L.U.
07-16-56	68.5	29.60	024	00	0068	

Integrator Difference

3727.1

Figure 2

Figure 3
Flow Diagram of Machine Calculation of Measurement Charts



function of which is to prepare written reports from punched-card input. The machine is controlled from a flexibly wired plugboard and can print from all or any portion of cards fed into it. The tab can either add or subtract digital information punched in the card for the purpose of printing group totals.

The *IBM sorter* is a single-feed machine the chief utility of which is to sort or arrange to any desired sequence a group or deck of IBM cards. The sorter consists physically of a number of independent card pockets equal to the number of possible digit punches which may be found in any column. The sorter operates at about 650 cards per minute and to sort any particular field in the card requires a number of passes through the machine equal to the size (or number of columns) in the field.

The *IBM collator* is a dual-feed input and four-pocket output machine, the main function of which is to collate or merge two independent decks or groups of cards into one combined group. In such an operation, it is necessary that each of the two decks going into the input side of the machine be prearranged or sorted into the same sequence order.

The collator also is capable of selecting into other pockets cards from either feed whose control numbers are unmatched by cards in the other feed. The collator, then, becomes an important tool in any tabulating installation where procedure requires that a deck of cards containing variable information be merged with another deck of cards containing constant information or data.

The *IBM type 650 calculator* is a dual-feed machine which performs all normal arithmetic functions, table look-ups and can test its own intermediate results for zero or sign balances. The input-feed accepts data from pre-punched cards; the output-feed punches calculated results into originally "blank" cards. The "650" is an internally stored program type of calculator, meaning that the instructions or orders for performing a given sequence of calculations are put into the memory of the machine before any data items.

Hence, in order to perform any calculating job on the "650", it must first be loaded with or fed a deck of instruction cards which pertain strictly to that calculating job to be performed. Capacity-wise the "650" consists of 2,000 "words" or units of storage, each

unit of which can accommodate a ten digit number and its associated sign.

The *IBM key punch machine* is a punched-card originating device. The input to the machine is via a keyboard similar to that of a conventional typewriter, operated manually. The output is in the form of punched-cards. The basic function of the machine is to transcribe, through the key-punch operator, information from any written source document to card form. Once the basic data have been so transcribed, then the corresponding punched-card becomes, in effect, the source document for all subsequent machine operations.

The *IBM transfer posting machine* (or "poster") is a single purpose machine used to transfer information from any report written on the IBM accounting machine (or "tab") to any other document.

Before entering into a discussion on calculations and procedure, it will be advantageous to discuss the orifice chart back-print that was devised to work compatibly with the machine operation.

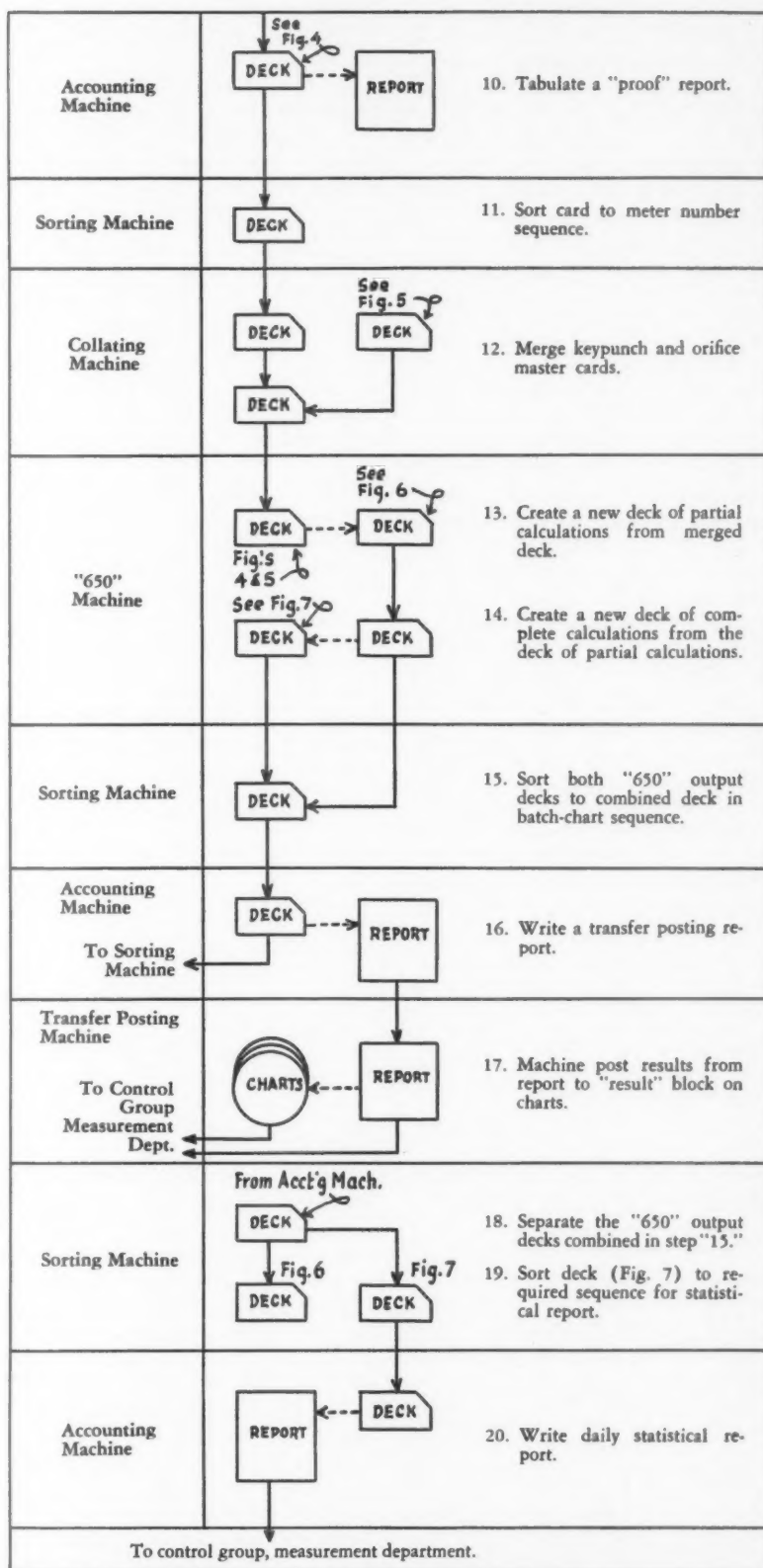
Referring to figure 2, note that the back-print is divided into six basic sections:

1. The identification block is normally completed in the field offices by the chart changers prior to their chart changing runs. Addressograph plate systems have been provided, wherever practical, to increase the efficiency of this operation.

2. The time block is also executed by the chart changer but during the chart run. It provides for recording the dates and times on and off. Ample room has also been provided for any remarks the chart changer may be required to make for the benefit of the home office measurement staff.

3. The data block is filled in by the home office measurement personnel upon receipt of the chart from the field. This block includes all data of a variable nature required for a volume calculation upon the particular chart.

4. The integrator difference block is entered by the integrator operators immediately after integrating the chart. Double register adding machines have been provided for this purpose, one for each integrator. The operator places the start reading into the machine negatively before integrating, the stop reading goes into the machine positively after integrating and the difference is then printed directly on the chart.



5. The batch-chart number is stamped on the chart by the measurement controls group just prior to sending the chart to the IBM section. This number is provided as a reference number for the IBM section and is never duplicated within a month's business.

6. The result block is executed by the IBM section at the completion of the calculation. This is effected by the transfer posting process as discussed in the section, "machines."

To illustrate the complete measurement calculation procedure, let us follow a single chart through its complete course of company activities (see figure 3).

1. A new chart is first addressed in the field office by the chart changer prior to his chart run. Here the identification block is filled in with the following items: (a) station or meter number, (b) meter serial number, (c) location name; i.e., well name in the case of a gas purchase or station name in the case of a sale, (d) line size, (e) plate size, (f) pressure base at which the base volume is to be calculated, and (g) contract with, or the name of the producer or producers in the case of a purchase well.

2. When the chart is placed in service at the meter, the chart changer records the chart "on" time in the time block.

3. When the chart is removed from the meter by the changer he records the chart "off" time in the time block.

Note that in figure 2, in respect to steps (1), (2) and (3) that the meter number is 3003602, it is a sale to the Southwest Public Service Co., the meter is on a 10-inch line and has a 6 $\frac{1}{4}$ -inch plate and the particular chart in question was on 24 hours.

4. The charts are then sent to the home office in El Paso via the mails or air-freight as the time of the month warrants.

5. The charts are received at the home office by the controls group of the measurement department which sorts and disseminates them to either the purchase group or the sales group for further processing.

6. The purchase and sales groups then execute the data block on the chart with the following information: (a) the record date of the chart, (b) chart temperature from an accompanying thermometer chart, (c) chart gravity from an accompanying gravimeter chart,

(d) hours operated, (e) days operated, if known to be required by either the accounting or proration departments and (f) the average gage pressure as taken from the record side of the chart.

7. The charts are then sent to the integrator group which integrates them and records the integrator difference in the integrator difference block. For convenience the charts are integrated in batches of from 50 to 100. The integrator difference is placed on the chart with a double register adding machine, the start and stop reading having been previously entered into the register minus and plus, respectively. Hence, by virtue of the second register in the machine, it is possible to extract a "batch total" for the complete batch of charts which, of course, will be the sum of the individual integrator differences. The batch of charts, the adding machine tape and the "batch total" are then forwarded to the control group.

8. The control group now will forward the charts from the measurement department to the administrative services departments' IBM section. Before conveyance, the control group gives each chart a "batch-chart" number, comprised of a 3-digit batch number and a 3-digit chart number. This is done with a Bates consecutive numbering stamp and each chart for the month thus receives a unique reference number. After numbering, the number of charts per batch is logged with its respective batch number, and the "batch total" is also recorded in the log and penciled on the first chart of each batch. This batch total thus becomes an initial control figure for the IBM section in its subsequent operations.

9. The first step in the punched-card phase of the procedure occurs at the key punch machine where the pertinent data from each chart will be transcribed into card form. Reference to figures 2 and 4 will illustrate the correspondence between the chart and the key punched card. Note that on the card, fields of prescribed lengths and particular locations have been provided, the inference being that all orifice charts will be punched in an identical manner. One card is punched per chart, and the key punched cards will emanate from the machine in the same sequence as were the charts from which they were punched.

10. The key punched cards now move from the key punch station to the ac-

counting machine or "tab" station. Here, the cards are tabulated to yield totals of integrator differences by batch. This operation constitutes, more or less, a proof of integrator difference punching and also insures against inadvertent loss of charts or cards. The tabulated batch totals are visually checked against the penciled "batch totals" recorded on the first chart by measurements' control group and, if they agree, the IBM process continues.

11. The cards are next handled at the sorter station where all cards from all batches are now sorted on columns 1 through 7 which arranges them into meter number sequence. This step simply is a preparatory operation for the step to follow. It should be remembered at this point that these cards contain information of a variable nature but do not suffice for a complete calculation in themselves.

12. The key punched cards, now sorted to meter number sequence, go to the collating station, where the IBM collator will merge them with a deck of permanent cards kept on file in the IBM section. These cards are known as orifice masters (see figure 5).

The orifice masters contain that information or data which might be called constant; i.e., these cards may be used and reused until such time that a physical change occurs in the line size, plate size, inert composition of the gas, pressure base for base volume or range of meter. These cards are initiated at the key punch station, being punched from a special control form executed and furnished by the measurement control group.

The collator, being a dual-feed machine, merges the orifice masters and the key punched cards by meter number yielding a resultant combined or composite deck of cards consisting of orifice masters (the constants), and key punched cards (the variables). The combined deck is, of course, primarily in meter number sequence, but within each meter number group, the key punched cards will be immediately preceded by their respective orifice masters.

13. The cards now flow to the type 650 calculator station where they can now be calculated to obtain volumes at the base and other desired pressures.

The merged orifice master and key punched deck is loaded into the read, or input, feed of the "650"; blank or unpunched cards are loaded into the

punch, or output, feed. In this operation the machine assimilates data from both types of input cards, goes through a series of data transfer and calculating operations and punches one output card for each input card of the keypunch variety.

The output (see figure 6), and formulae of this step are as follows:

- (a) Meter number = 3003602
- (b) Producer number = 0580
- (c) Date = 07 16 6
- (d) Days operated = 00
- (e) Gravity = 0.660
- (f) Gage pressure = 0068 (psi)
- (g) Coefficient = 009794.000 (@ 14.9#, 0.630G., 60°F)
- (h) Machine constant = 00.447
- (i) Factor code = 1
- (j) Batch-chart number = 285075
- (k) Integrator difference = 3727
- (l) Pressure Base minus 10 psi = 4.900
- (m) Gravity and Temperature Correction Factor =

$$F_g F_t = \sqrt{\left(\frac{\text{Base Temp. Abs.}}{\text{Flow Temp. Abs.}} \right)} \times \left(\frac{\text{Coefficient Gravity}}{\text{Gas Gravity}} \right)$$

$$= \sqrt{\frac{520 \times 0.630}{(0.56 + 460) \times 0.660}} = 0.9808$$

- (n) Reynolds Factor =

$$F_r = \frac{B}{\sqrt{h_w P_r}} + 1$$

$$\text{since } \sqrt{h_w P_r} = \frac{C_s \times K_m \times ID}{H}, \text{ then}$$

$$F_r = \frac{B \times H}{C_s \times K_m \times ID} + 1 = \frac{.0316 \times 24}{0.7071 \times 00.447 \times 3727} + 1 = 1.0006$$

Where,

- B = A. G. A. factor for Reynolds number
- H = Hours operated
- C_s = Square root chart coefficient
- K_m = Machine constant
- ID = Integrator difference

- (o) Expansion factor =

$$Y = (Y_o - 1) \left(\frac{h}{P_a} \right) + 1$$

$$\text{where } Y_o = Y @ \frac{h}{P_a} = 1$$

$$\text{and since } \sqrt{h P_a} = \frac{C_s \times K_m \times ID}{H}$$

$$\text{or } \frac{h}{P_a} = \left(\frac{C_s \times K_m \times ID}{H \times P_a} \right)^2, \text{ then}$$

$$Y = (Y_o - 1) \times \left[\frac{ID \times C_s \times K_m}{H \times (P + A)} \right]^2 + 1$$

$$= (0.9757 - 1) \times \left[\frac{3727 \times 0.7071 \times 00.447}{24 \times (0068 + 14.12)} \right]^2 + 1 = 0.9913$$

where, P_g = Gage Pressure

A = Average Atmospheric pressure at meter

It should be pointed out here that if it had not been necessary to calculate a new F_r and Y factor for each chart change, then the values of F_r and Y could have been in the coefficient obviating steps (n) and (o) above.

(p) Supercompressibility indices "A" and "B" = 068 and 059. The indices "A" and "B" are punched into the output card on this run to be used on the following machine run to determine the F_{pv} factor. The method of determination of these index values will be discussed at greater length in step (14) below.

(q) Pressure range index code = 1. This code is punched out for the express

purpose of facilitating sorting for the following run. It has a direct relation to the supercompressibility indices, and will be more fully explained.

At the completion of this run the input feed cards are sorter separated, the orifice master cards being returned to their permanent file, and key punched cards being destroyed since they have no further utility.

The output feed cards remain at the "650" calculator at station since they become the input for the next step in the procedure.

14. On the second pass through the "650" there are three basic subdivisions to the calculating routine: (a) the determination of the F_{pv} factor, (b) the extension of the several factors and data involved to obtain a corrected volume at base pressure and (c) the conversion of the corrected volume at base pressure to four other pressure bases.

At present El Paso Natural Gas Co. is employing bulletins TS-402 and TS-461 of the California Natural Gasoline Association for F_{pv} values. These bulletins consist essentially of tables and the supercompressibility factors are obtained basically by look-up methods: TS-402 dealing with pressures under 500 psi, TS-561 with pressures over 500 psi. Although each of the look-up schemes is similar, there is enough difference in their use to warrant a short explanation of each:

TS-402:

(a) A table is entered on gage pressure and specific gravity to obtain an uncorrected factor, F_{pvo};

(b) A second table is subsequently entered on F_{pvo} and temperature to obtain a final, corrected factor, F_{pvt}.

TS-461:

(a) The first table is entered on specific gravity to obtain uncorrected values of pseudocritical pressures and temperatures, P_{co} and T_{co};

(b) These values are then corrected for inert components N₂ and CO₂ by the following formulae:

$$P_{ct} = P_{co} \pm P_{corr}$$

T_{ct} = T_{co} ± T_{corr}, the amounts and signs of the P and T corrections having been punched in the orifice master cards.

(c) A second table is entered on the indices P_{ct} and gage pressure to obtain reduced pressure, P_r;

(d) A third table is similarly entered on the indices T_{ct} and temperature to

METER NO.	PROD. NO.	DATE	TEMP.	ORAN.	GAGE PRES.	BASE PRES.	TLU PRES.	LO.	BATCH-CHART NO.
1111111111	1111111111	1111111111	1111111111	1111111111	1111111111	1111111111	1111111111	1111111111	1111111111
2222222222	2222222222	2222222222	2222222222	2222222222	2222222222	2222222222	2222222222	2222222222	2222222222
3333333333	3333333333	3333333333	3333333333	3333333333	3333333333	3333333333	3333333333	3333333333	3333333333
4444444444	4444444444	4444444444	4444444444	4444444444	4444444444	4444444444	4444444444	4444444444	4444444444
5555555555	5555555555	5555555555	5555555555	5555555555	5555555555	5555555555	5555555555	5555555555	5555555555
6666666666	6666666666	6666666666	6666666666	6666666666	6666666666	6666666666	6666666666	6666666666	6666666666
7777777777	7777777777	7777777777	7777777777	7777777777	7777777777	7777777777	7777777777	7777777777	7777777777
8888888888	8888888888	8888888888	8888888888	8888888888	8888888888	8888888888	8888888888	8888888888	8888888888
9999999999	9999999999	9999999999	9999999999	9999999999	9999999999	9999999999	9999999999	9999999999	9999999999

Figure 4 - Key Punch

METER NO.	PROD. NO.	K_m	COEFF.	COEFF. CORR.	PRES. BASE	ATMOS. P.	V_e	V_c	V_b	V_a	EFF. DATE	C_p
1111111111	1111111111	1111111111	1111111111	1111111111	1111111111	1111111111	1111111111	1111111111	1111111111	1111111111	1111111111	1111111111
2222222222	2222222222	2222222222	2222222222	2222222222	2222222222	2222222222	2222222222	2222222222	2222222222	2222222222	2222222222	2222222222
3333333333	3333333333	3333333333	3333333333	3333333333	3333333333	3333333333	3333333333	3333333333	3333333333	3333333333	3333333333	3333333333
4444444444	4444444444	4444444444	4444444444	4444444444	4444444444	4444444444	4444444444	4444444444	4444444444	4444444444	4444444444	4444444444
5555555555	5555555555	5555555555	5555555555	5555555555	5555555555	5555555555	5555555555	5555555555	5555555555	5555555555	5555555555	5555555555
6666666666	6666666666	6666666666	6666666666	6666666666	6666666666	6666666666	6666666666	6666666666	6666666666	6666666666	6666666666	6666666666
7777777777	7777777777	7777777777	7777777777	7777777777	7777777777	7777777777	7777777777	7777777777	7777777777	7777777777	7777777777	7777777777
8888888888	8888888888	8888888888	8888888888	8888888888	8888888888	8888888888	8888888888	8888888888	8888888888	8888888888	8888888888	8888888888
9999999999	9999999999	9999999999	9999999999	9999999999	9999999999	9999999999	9999999999	9999999999	9999999999	9999999999	9999999999	9999999999

Figure 5 - Orifice Master

METER NO.	PROD. NO.	DATE	ORAN.	GAGE PRES.	COEFF.	K_m	BATCH-CHART NO.	LO.	PRES. BASE	V_e	V_c	V_b	V_a	V_r	"A"	"B"
1111111111	1111111111	1111111111	1111111111	1111111111	1111111111	1111111111	1111111111	1111111111	1111111111	1111111111	1111111111	1111111111	1111111111	1111111111	1111111111	1111111111
2222222222	2222222222	2222222222	2222222222	2222222222	2222222222	2222222222	2222222222	2222222222	2222222222	2222222222	2222222222	2222222222	2222222222	2222222222	2222222222	2222222222
3333333333	3333333333	3333333333	3333333333	3333333333	3333333333	3333333333	3333333333	3333333333	3333333333	3333333333	3333333333	3333333333	3333333333	3333333333	3333333333	3333333333
4444444444	4444444444	4444444444	4444444444	4444444444	4444444444	4444444444	4444444444	4444444444	4444444444	4444444444	4444444444	4444444444	4444444444	4444444444	4444444444	4444444444
5555555555	5555555555	5555555555	5555555555	5555555555	5555555555	5555555555	5555555555	5555555555	5555555555	5555555555	5555555555	5555555555	5555555555	5555555555	5555555555	5555555555
6666666666	6666666666	6666666666	6666666666	6666666666	6666666666	6666666666	6666666666	6666666666	6666666666	6666666666	6666666666	6666666666	6666666666	6666666666	6666666666	6666666666
7777777777	7777777777	7777777777	7777777777	7777777777	7777777777	7777777777	7777777777	7777777777	7777777777	7777777777	7777777777	7777777777	7777777777	7777777777	7777777777	7777777777
8888888888	8888888888	8888888888	8888888888	8888888888	8888888888	8888888888	8888888888	8888888888	8888888888	8888888888	8888888888	8888888888	8888888888	8888888888	8888888888	8888888888
9999999999	9999999999	9999999999	9999999999	9999999999	9999999999	9999999999	9999999999	9999999999	9999999999	9999999999	9999999999	9999999999	9999999999	9999999999	9999999999	9999999999

Figure 6 - Run #1 Output

METER NO.	PROD. NO.	DATE	ORAN.	GAGE PRES.	F_{pv}	%	BATCH-CHART NO.	CONVERSIONS
								14.850 14.900 14.935 14.900
1111111111	1111111111	1111111111	1111111111	1111111111	1111111111	1111111111	1111111111	1111111111
2222222222	2222222222	2222222222	2222222222	2222222222	2222222222	2222222222	2222222222	2222222222
3333333333	3333333333	3333333333	3333333333	3333333333	3333333333	3333333333	3333333333	3333333333
4444444444	4444444444	4444444444	4444444444	4444444444	4444444444	4444444444	4444444444	4444444444
5555555555	5555555555	5555555555	5555555555	5555555555	5555555555	5555555555	5555555555	5555555555
6666666666	6666666666	6666666666	6666666666	6666666666	6666666666	6666666666	6666666666	6666666666
7777777777	7777777777	7777777777	7777777777	7777777777	7777777777	7777777777	7777777777	7777777777
8888888888	8888888888	8888888888	8888888888	8888888888	8888888888	8888888888	8888888888	8888888888
9999999999	9999999999	9999999999	9999999999	9999999999	9999999999	9999999999	9999999999	9999999999

Figure 7 - Run #2 Output

obtain the reduced temperature, T_r .

(e) Finally a fourth table is entered on P_r and T_r to obtain the F_{pv} value.

As mentioned in steps 13 (p) and 13 (q) a portion of the look-up work is done in the first pass through the 650, viz. obtaining indices "A" and "B" and the pressure range index code. In the case of under 500 psi gas, "A" = gage pressure converted to a look-up index, "B" = temperature converted to a look-up index. In the case of over 500 psi gas, "A" = reduced pressure, P_r ; "B" = reduced temperature, T_r . Fortunately P_r and T_r can be mathematically calculated by relatively simple formulae, which obviates storing a pair of sizable tables in the memory of the machine. The pressure range index code is a single digit code, 1 through 4, which corresponds to the gage pressure of the chart:

- Code 1 = 0 through 99 psi,
- Code 2 = 100 through 199 psi,
- Code 3 = 200 through 499 psi, and
- Code 4 = over 500 psi.

Immediately prior to the second 650 pass the output cards from the previous run are sorted on the pressure range index code to yield up to four pressure range groups.

The output cards from the first 650 run then become the input for the second run, their order of sequence into the machine being the pressure range index code. Each of the four groups, however, is preceded by a group of master "load" cards which contain the applicable F_{pv} and "A" and "B" index values for the cards that follow. Obviously, for reasons of machine memory economy, each of the four table-load groups is stored in the same locations of storage. The remainder of the calculating instructions is the same for each of the four groups and satisfies the formula, $V_c = ID \times K_m \times C \times F_g F_t \times F_r \times Y \times F_{pv}$, where C = the hourly coefficient.

Having obtained V_c , the corrected volume at base pressure, the machine is then programmed to convert V_c to four other desirable pressure bases by

$$V_1 = \frac{V_c \times P_c}{P_1}$$

where, P_c = pressure base at which hourly coefficient is effective [see 13 (I)].

P_1 = pressure base being converted to.

In extending the formula to obtain V_e the machine examines the factor code on the input card to determine which of the four factors is applicable. Hence, in the case of the illustrative example, the $F_{pv} = 1.0070$.

$$V_e = 3727 \times 00.447 \times 009794.00 \times 0.9808 \times 1.0006 \times 0.9913 \times 1.0070 = 15,986 \text{ Mcf.}$$

The output of the second run would appear as follows, see figure 7:

- (a) Meter number = 3003602
- (b) Producer number = 0580
- (c) Date = 07 16 6
- (d) Days operated = 00
- (e) Gravity = 0.660
- (f) Gage pressure = 0068
- (g) $F_{pv} = 1.0070$
- (h) $V_e = 15,986$
- (i) Coefficient pressure base code = 5
- (j) Batch-chart number = 285075
- (k) Volume @ 14.650 psi = 16,259
- (l) Volume @ 14.900 psi = 15,986
- (m) Volume @ 15.025 psi = 15,853
- (n) Volume @ 16.400 psi = 14,523

Upon completion of this 650 run we now have two IBM cards per chart calculated; one from each of the 650 runs. Both decks of cards now proceed to the sorter station for the next operation.

15. The next operation is to sort or arrange both decks of result cards to batch-chart sequence. The combined sorted deck now flows to the "tab" station where a printed report will eventually.

16. At the "tab" station the cards feed into the machine in batch-chart sequence and the "tab" is controlled to perform the following functions:

(a) To print on a single line portions of the information found on each of the two batch-chart card groups; batch-chart number, meter number, machine constant, hourly coefficient, $F_g F_b$, F_r , Y , F_{pv} and V_e .

(b) To accumulate and place into a machine counter the integrator difference from the first card of each batch-chart group, and

(c) To recognize when the cards feeding into the machine change from one batch number to another, to temporarily suspend card feeding and to print out the total of all the integrator differences for the batch group preceding.

This report, called the transfer posting report, is printed on an unrulled continuous form which is backed, as it travels through the machine carriage, by

a continuous reverse-carbon form. Hence when the run is concluded and the carbon is stripped from the main form, the report will be printed on both sides; an inked-ribbon impression on the front and a carbon-deposit mirror-image on the rear. This report is printed in this machine in order to facilitate its use in transfer posting as described in step 17, below.

Before proceeding to the next operation the machine operator visually compares the batch integrator totals against the control figures on the first chart of each batch (see steps 8 and 10). If the totals are still in agreement, loss of no IBM cards is assured and the procedure continues.

17. For the next operation the punched cards are temporarily set aside and, instead, the transfer posting report and the original charts flow to the transfer posting machine station. Hence, since the lines of result information on the report and the charts are in identical batch-chart sequence, the machine can post or transfer the information from the report to the result box of the chart, figure 2 (F).

18. The cards, temporarily set aside at the conclusion of step 16, now move to the sorter station where, in one pass, they are separated into two groups corresponding to the first and second 650 runs. The cards from the first run, figure 6, are now destroyed since they have no further use. The cards from the second run, figure 7, remain at the sorter station for the next operation.

19. The remaining group of cards from the completion of step 18 are now further sorted to producer number, meter number and date and then go to the "tab" station for the next operation.

20. The cards from above are now listed, one line per card, to yield a statistical report consisting of the same indicative and result information as is on the punched card. The cards used in this step are now filed with other similar cards comprising prior month-to-date calculations.

21. The completed orifice charts, the statistical report and the transfer posting report are now sent by the IBM section to the measurement department control group which, upon receipt, first checks the batch totals on the transfer posting report against their equivalent logged totals (see step 8) to satisfy that no charts have become lost in their inter-departmental travel. The completed charts

and the statistical report is then disseminated to the appropriate sections of the measurement department to be utilized as required.

This completes the daily procedures.

El Paso Natural Gas is presently calculating approximately 35,000 orifice charts per month via the punched card method. These are divided in number about half and half between daily and weekly charts. However, since all of the charts in the gathering and distribution system cannot be changed in one and the same day, the resultant influx of charts into the home office and the machine section is reasonably constant and devoid of extreme "peaks."

This condition is a more or less ideal one in respect to a machine operation in that it minimizes the number of machines of any given type required to handle the most adverse load. In this respect the over-all machine operation has worked very satisfactorily for the company and has further enabled the administrative services department to better utilize punched card equipment that had previously been installed for accounting and engineering use.

There are several other "fringe" benefits that ensue as a result of the availability of the 650 run No. 2 cards; viz., they are used to machine write monthly volume statements which are sent to the various producers; they provide for a machine written detail and summary ledger record for the measurement department; they are reproduced or duplicated and the duplicates provide source information or data for proration department punched card operations; and, finally, the cards themselves become the source for the monthly gas accounting punched card operations.

Hence, as a result of the measurement calculation punched card operation, several other would-be costly and lengthy key punching procedures (as well as the manual preparatory operations that would have to precede them) are eliminated.

In an endeavor to affix a time element to the machine-procedure, it should be stated that about 2,000 charts per day are processed through the IBM section and that charts entering the IBM section at the beginning of any 8-hour shift are completely processed and returned to the measurement department at the end of the same shift.

This time would roughly be divided as follows: 2 hours of key punching, 1 hour of "tab" proofing and preparatory

merging, 1½ hours of 650 calculating, and 3½ hours transfer posting and "tab" reports. To increase operator efficiency, the transfer posting machines are operated by the key punch operators since the work loads on these two machine types are generally out of phase.

There has been some speculation at El Paso Natural Gas regarding the

changes or modifications that would be required in our present system, in the event that the A. G. A. No. 3 report should supersede the CNGA tables for supercompressibility. One possible solution would be to change the programming on the first "650" calculating run to yield indices (from A. G. A. Report #3) as follows:

$$\begin{aligned} "A" = P' = P_f + \left[\frac{(G - 13.84X_c + 5.420X_n) - .6}{22.26 - (G - 13.84X_c + 5.42X_n)} \right] P_f \\ \text{and } "B" = T' = T_f + \left[\frac{.6 - (G - .472X_c - .793X_n)}{.468 + (G - .472X_c - .793X_n)} \right] T_f \end{aligned}$$

where G = Gas Gravity
 T_f = Absolute Flowing Temperature
 P_f = Flowing Pressure
 X_c = Mol % $CO_2 \div 100$
 X_n = Mol % $N_2 \div 100$

Hence, on the second "650" run, it would only be necessary to replace the old CNGA cards with new A. G. A. No. 3 cards in the load-instruction deck and perform an F_{pv} look-up comparable to the present method. Obviously, $\pm T_{corr}$ and $\pm P_{corr}$ in the present orifice master cards would have to be replaced by X_c and X_n .

It is suggested to those who would desire to investigate the possibilities of punched card methods applied to their own specific measurement problems, that any research involved be performed by a joint team of measurement and machine men. In so doing, each becomes educated to the technical and operational problems of the other which is vital to effect a solution satisfactory to all concerned.

White-haired

(Continued from page 26)

sue a policy of promotion from within. Where practiced it has earned wide acceptance as an economical and sound method of providing for future needs of managerial talent. How essential is a college degree to success as an executive? I believe that more and more companies are insisting on this qualification. Yet, the college degree, in itself, does not necessarily contribute to the rate at which people move ahead in an organization.

It is my personal conviction that in many instances the so called white-haired may be a better risk than the fair-haired. The white-haired knows more about the company, his superiors know more about his capabilities, and he can certainly be depended upon to stay with you for a longer period of time. Moreover, promoting a man from the ranks is fundamental to maintaining morale.

I don't wish to imply, however, that people should be promoted solely on the basis of long, loyal service, without

being ready. They must possess the qualifications required in order to develop into successful executives. On this score, I do not believe an educational background is nearly as important as business experience, maturity of judgment, ability to think creatively, and the knack of knowing how to get along with people.

The young college graduate, fresh out of school, needs some years of personal growth and business experience to acquire these qualifications. Yet, he often thinks that he is not advancing fast enough, becomes impatient, and begins to "shop around," especially if he bears the greater responsibilities and increasing expenses of married life. Even though they have received every reasonable consideration, such individuals frequently do not hesitate to accept positions with other companies which offer more money. And this behavior, often quite ill-considered from any point of view, seems to be on the increase. Each time it occurs, an investment of \$15,000 or more has gone "down the drain." Management must take every precaution to evaluate this practice in view of both

its costliness and its potentially serious effect on the efficient operation of the organization.

We management people are unquestionably on the spot to provide a reserve of trained and experienced supervisors, department heads, and key personnel whose potentialities are adequate to fill higher executive and administrative vacancies as they occur. Experience proves that, to discharge this responsibility under all conditions and over the long term, we must develop flexible and resourceful personnel policies for the fullest exploitation of all sources of talent, both within and outside our organizations.

We must not be diverted from our true goal—young men possessing the particular and diverse qualifications which we know are essential for the many types of management jobs within our companies. Only so can we rest assured that the efficient operation of our departments and of the company as a whole will continue despite the unpredictable demands of our own organizational development and the uncertainties of future business conditions.

Northern Illinois plans to raise \$10 million for expansion

NORTHERN ILLINOIS Gas Company is planning to raise about \$10 million early this year, Marvin Chandler, president of the utility, has disclosed. Feb. 19 has been tentatively set as the offering date.

"No decision has been made as to the form of the proposed financing," Mr. Chandler said.

"However, because of the company's

strong common equity position, no consideration is now being given to the sale of common stock, or securities convertible into common stock."

The new funds, Mr. Chandler explained, will be part of the estimated \$85 million of new capital required for the company's projected \$125 million five-year (1958-62) construction program. This outlay will provide

for the new customers the utility expects to connect during the five-year period. He added that about a quarter of the \$125 million has been included to provide for the possibility that underground storage facilities in northern Illinois may be located and developed during this period in accordance with the efforts the company has been making along this line for some time.



Entering the all-gas equipped home which was given free to a lucky Manchester, N. H., resident is (l. to r.) Samuel McCallister, Mayor Josaphat T. Benoit, Henry G. Massey, and Warren Journey

The Manchester, N. H., Gas Co. knows that when you go downtown in Manchester, you almost invariably get around to crossing the intersection at Elm, Hanover, and Market Streets.

There, you'll see the city hall, two savings banks, two national banks, and the county court house. The business section fans out from this center, and Manchester residents like to refer to the crossing as their own "Times Square."

It is precisely at this spot that the Home Builders Association of New Hampshire and the Manchester Gas Co. erected an all-gas equipped home that literally "stole the show" from the local electric utility.

Thousands of people saw the \$15,000 structure during its stay at the intersection (the home rested on the parking area of a bank) and thousands more saw it later during the Manchester Home Show's Better Living Exposition.

As a fitting climax to the promotion, the home was awarded to a lucky Manchester resident on the last day of the Home Show. In addition, the winner also was given a free lot by the Home Builders Association.

The decision to cooperate with the Home Builders paid off for the gas company. No other single promotion in the area has gained so much attention for gas and gas appliances, according to Samuel McCallister, executive vice-president of Manchester Gas Co. Warren

Journey, the utility's general sales manager, coordinated Manchester Gas' efforts in the promotion.

One third of the floor space at the State Armory in Manchester, site of the exposition, was taken over for the gas display. Mr. Journey advertised the promotion through the media of newspaper, radio and television, and by direct mail, visual displays and a public address system.

In every instance, the term "all-gas equipped home" was used.

The promotion began with a teaser ad campaign which was continued until the home was built on the bank parking lot. A board wall hid the house while it was under construction. Huge question marks were painted on the boards and created considerable interest among the area's residents.

Secret well-guarded

It was a well-guarded secret and until the house was taken from under wraps, only those connected with the promotion knew what was being constructed. First man to officially enter the home was Manchester's Mayor J. T. Benoit. Hundreds followed him the first day to see the all-gas home, and thousands more visited during its stay at the intersection.

Appliance manufacturers participating with the Manchester Gas Co. by donating gas appliances include Ruud,

Spotlight on gas in home show

Norge, Roper, Servel, Temco, and Warm Morning.

The Home Show, second phase of the promotion, entertained some 40,000 visitors (about 49 per cent of the city's population) during the three-day event. There on opening day were state and city officials, representatives of the Chamber of Commerce, manufacturers, members of the communications media, and most important, several thousand housewives who showed a genuine interest in the all-gas home.

The show gave Manchester Gas Co. a fine opportunity to do some first hand selling. Sales Manager Journey reported that 107 major units were sold by his company within a ten-day period following the exhibit. In addition, several hundred leads were obtained through the coupons signed by persons indicating they were interested in the gas appliances.

Summing up the promotion, Manchester Gas' executive vice-president, Samuel McCallister, said, "Manchester and New Hampshire woke up to the fact that the gas industry is active, alive and aggressive; that gas appliances compare most favorably with those manufactured by competitors; and by actual usage, those new customers who joined our family since the Home Show are reporting that by far, our gas appliances stand up to every claim made by our sales organization."

Convention

(Continued from page 15)

from 9:45 a.m. until noon each day of the convention in the Grand Ballroom of the Atlantic City Auditorium. Individual Section meetings will be held Monday and Tuesday afternoons. Section meetings will be in the Ritz-Carlton, Traymore, Dennis and Claridge Hotels.

Convention headquarters for delegates

arriving on the Sunday prior to the opening day will be at the Traymore Hotel. From Monday through Wednesday, headquarters will be in the lobby of the Auditorium.

The following hotels have been assigned the various Sections: Accounting, Ritz-Carlton; General Management, Dennis; Industrial and Commercial Gas, Traymore; Residential Gas, Traymore;

and Operating, Claridge.

Hugh L. Wathen, vice-president, South Jersey Gas Co., and chairman, 1958 Entertainment Committee, announced that the practice of combining the President's Reception, entertainment and dance in one evening will be continued this year. He also said that the annual ladies' luncheon and style show will be held during the convention.

Commercial customers

(Continued from page 30)

is responsible for the same group of institutions that are receiving commercial service. This salesman or technician calls on the owner frequently, and he maintains liaison among the owner, the equipment manufacturer, the equipment distributor, and the equipment distributor's salesman.

He must have some knowledge of layout and be able to work up proposals and comparative operating costs between gas and electric equipment. He must know how a restaurant and hotel kitchen works. He should be able to make recommendations of value to the owner in both operating procedure and design.

Assuming that we have such a man, or such men, in the sales department, then we come to the most critical part of the whole operation. There must be constant contact between the sales department representative and the service department representative.

When I speak of contact, I don't

mean contact in the form of a routine report with six carbons. I mean *personal* contact between the customer service man and his counterpart in sales.

The purpose of this contact becomes obvious when it has once been thoroughly tried. The commercial service man goes out on a call and finds improperly operating equipment, which he puts in shape as best he can. He finds equipment which cannot be easily and adequately repaired. He runs into a situation where the chef expresses an interest in gas equipment or the owner states his desire for an electric range. He transmits all this information, immediately and verbally, to the sales representative—who knows what to do next. Sales moves into the picture and secures the continuation of the commercial load by providing the owner with all the help he needs in getting the new equipment he probably wants.

In our company, our service people work under and report to the operating department. However, conferences are set up so that the sales personnel and the commercial service personnel meet twice a month for possibly only an hour and jointly work out commercial cooking problems of the restaurant and hotel owners. In the small divisions the commercial service man and his counterpart in sales get together as often as they need to. Both sides of the organization chart are vitally interested in this business and there is thorough and complete cooperation between them.

Fourth, during the installation of all new major gas equipment, the customer service man and the company salesman should be present. Their services should be visibly available to the purchaser, the manufacturer-seller, and the plumber. Unfortunately, the nature of commercial cookery is such that these installations are often made at odd hours of the night, and generally on a night during the weekend. The customer service man

should still be there. The installation and final inspection of a battery of ranges or of a totally new layout in the local hotel's kitchen represents the completion of a large and thoroughly explored expenditure. It is a matter of some importance to the chef and the owner. It should be a matter of importance to us.

Fifth, in each of our two largest metropolitan areas we have a full time commercial dietician. The girls do extremely valuable work for us. Our dietician works with the dietician of the hotel or restaurant in a common effort to make better use of the available equipment. She helps the church or school which has no dietician. She suggests group-feeding plans, develops low-cost meals, and makes herself generally indispensable in matters pertaining to efficient and profitable mass feeding.

You may ask, "What has all this got to do with selling gas?" One thing only—never underestimate the power of a woman. The dietician in a hospital or institution is the focal point of most equipment purchases. It helps if they are on your side when the decision is made. We find that such dietary service comes back to us in plusses when kitchen equipment is being chosen. Our church contacts have been particularly valuable.

Sixth, we recommend that you have your commercial sales people join the local chapters of the Stewards and Caterers Association, National Restaurant Association or whatever counterpart of these associations exists in your area. We suggest they should be active members and attend all business and social meetings. They should participate in area State Restaurant Association shows, state school conferences and exhibitions, state hospital and institutions exhibits. If you are not a large gas company, you can combine with other gas utilities to take space at these exhibits. In short, it is important to be a part of the restaur-

Gas lights in Midwest

It's still gas for street lighting in Lake Forest, a town in northern Illinois. There are 183 scalloped-edged gas street lights in Lake Forest, each regulated by its own clock which turns the lights up or down. A pilot light burns continuously. Once each week a city employee goes around and winds each clock, and when necessary alters the timing mechanism to correspond with the change in daylight hours. And every two years the black posts are given a fresh coat of paint. The standards were originally installed as kerosene lights in 1916, and have been converted to natural gas in what may be the only gaslit town in the Midwest.

rant and hotel business, not just a supplier.

In order to give you some idea of the way we staff this operation, I would like to outline for you the set-up in our major divisions.

In the Cleveland Division there are 2,200 restaurants, hotels, hospitals, institutions and schools. The sales department covering this group of commercial accounts consists of two supervisors, five salesmen, and one dietician. This gives you a loading of approximately 300 units per man. Our supervisors carry a work load as well as the men. Naturally, it is not as heavy and consists of the principal accounts and contacts with equipment manufacturers and dealers. Supervisors are also charged with the responsibility of making customer calls with their technicians.

Because of the differences that exist between commercial restaurants and charitable or government-supported institutions, we separate them for the purposes of sales contact. One supervisor and four men handle the restaurants, hotels, clubs, and industrial cafeterias; one supervisor, one technician salesman, and the dietician are responsible for maintaining all sales contacts with institutions, hospitals and schools. This institutional group is also responsible for maintaining all liaison with architects and designers who prepare the drawings and specifications for institutional kitchens and cafeterias. It may appear to you that we are attempting to refine this problem in an overcritical manner. I assure you that it has paid off.

The operating department has assigned one supervisor and six commercially trained customer service men to this activity. This gives us a loading of 350 commercial accounts per man.

Three per cent of our accounts, or approximately 70 accounts, are contacted and serviced by the customer service men each and every month. Sixteen per cent, or approximately 350 accounts, are contacted every 90 days. Forty-seven per cent are serviced every six months, and the balance once each year. The average service call is not one of great complexity, but the representative is charged with checking each individual piece of gas-burning equipment and the accuracy of all thermostats.

Now let me summarize the main points. The basic segment of that portion of our business known as commercial is the large-volume cooking estab-

Stephens offers Little Rock free gas lighting

W. R. Stephens, chairman of the board of Arkansas Louisiana Gas Co., offered Little Rock a free natural gas street lighting system without a string attached.

His offer included "installation and operation, including free monthly gas" without any time limit. He said he could talk the ALG board into approving the offer.

"We'll cover the whole city," Mr. Stephens told the Little Rock City Manager Board. "In fact, we could install gas lights from here to Shreveport, La. It will be excellent advertising for us."

The proposal caught the City Manager Board short. Even Mr. Stephens' aides appeared a little stunned but they rallied quickly as Mr. Stephens developed the plan.

The City Board approved the installation of some sample street gas lights in front of City Hall. This, said Board members, will give them and the public an opportunity to see what the gas lights look like.

The city now buys electric power for about 2,900 street lights. The annual cost for this power is about \$16,000. The city owns the lights and most of the light poles.

Electric company officials declined to comment on Mr. Stephens' offer to

the city except that one said that "gas lights are obsolete as everyone knows."

Mr. Stephens brushed aside this contention beforehand. He said that modern gas lighting was attracting attention.

"Think of what you can do with the money you will save," Mr. Stephens told the directors.

Before the meeting was over Mr. Stephens almost, but not quite, had sold them on installing gas heating and air conditioning in the City Hall.

He proposed a package deal for the air conditioning system under which the cost would be paid out monthly with the gas bill over a 10-year period.

"We are doing the same thing in every church in the state," he said.

Mayor Werner C. Knoop broke in to say that the Board hadn't been considering buying an air conditioning system. The Board ended up by asking Mr. Stephens to submit his proposals in writing for their consideration.

"That man will not be satisfied," whispered a Board member, "until he gets the state to substitute a gas chamber for the electric chair."

—Excerpted from an article by Ernest Valachovic in the *Arkansas Gazette* of Dec. 14, 1957.

lishment. Although this business is under-appreciated, it actually is the best business we can get. It is sold at the top rate. It is a constant, non-peaking load. It is located in areas already served by existing gas mains. Its equipment is first-rate and competitive.

The fact that our industry still has so much of this business is owing more to good luck and old habit than to our own good management. Appreciation of this business is overdue. We should analyze our commercial cooking business. We should look at it in the light of today's rates and sales. We can't afford to lose it.

My own company believes that the secret of retaining and gaining commercial sales is good commercial service. We have designed our service accordingly.

Our commercial food service set-up is built around six practices. They are:

1. Train men who are experts at

commercial cooking service and make this their prime responsibility.

2. Schedule every commercial cooking establishment for a periodic service call, depending on type and size, whether the establishment asks for the service or not.

3. Maintain close personal contact between the commercial salesman and the commercial service man. Make it easy for them to talk to each other.

4. Have the service man present at the installation of all major commercial gas equipment, no matter when the installation is made.

5. Provide the services of a full-time dietician.

6. Participate in trade associations and industry exhibits.

We believe this program has been a leading reason for our success in developing and holding a high percentage of our commercial cooking business and I believe it will do the same for you.

Home service

(Continued from page 9)

baked four layers of cake, cooked two vegetables on top burners and barbecued a breast of turkey on the rotisserie. In each instance, she did a selling point on range features and indicated that this same demonstration has been presented in Portland not only to club groups but to sales personnel, home builders, real estate people and architects.

Jeanne Montgomery, United Fuel Gas Co., varied the usual demonstration for salesmen by having them assist in skits to bring out sales features and then carried through the demonstration rather than using further salesman participation. She was assisted in the demonstration by Walter Diegre and Robert Rustvold, Minneapolis Gas Co.

"The Ize of Planning," a step-by-step analysis toward building a successful home service plan, was presented by Mrs. Marguerite Fenner, Pacific Gas and Electric Co., San Francisco. Her talk was developed through a play on words ending in "ize" and in sequence of operation, these headings were used: analyze, itemize, recognize, visualize, utilize, capitalize, emphasize, localize, scrutinize, modernize and popularize.

Some how-to-do-it suggestions were presented in three workshop presentations. First was an account of "Centennial Celebrations" in which Eleanor Morrison, Michigan Consolidated Gas Co., reported on the recent centennial in Grand Rapids. In making home service

plans, she assembled ideas used in other companies for their anniversary occasions. An idea used in Grand Rapids was a series of three minute television commercials where a girl, dressed in the fashion of 1857, pantomimed cooking at an antique range with a flash to another kitchen where the ease of today's cooking was demonstrated on a modern gas range.

Two *Better Homes & Gardens* magazine editors presented an illustrated talk on "Showmanship: What With, and How." Mrs. Ann Worden Fitch and Virginia Stacy, both formerly in gas company home service, spelled out showmanship as a means of capturing attention, creating desire and stimulating action. They presented a roundup of today's interests as they have seen them editorially and indicated ways in which home service could capitalize on them and gain dividends of assured public interest. The editors indicated that there was a trend among homemakers toward elegance in entertaining, a concern with health and diet, emphasis on foreign foods, more use of color, and home entertaining.

A display of decorative items, colorful utensils and decorative props were shown to illustrate points made. The speakers indicated that manufacturers of accessories, housewares and gadgets are tying in their products along the lines of these new interests and "we feel that demonstrations built around these big trends should be sure-fire interest sparkers. You will find that accessories,

cleverly used, can become potent punctuation marks for your central theme—selling gas and gas equipment."

A symposium of successful projects under way featured new audience groups and new ways of presenting gas and gas equipment to them. Juanita Luthi, The Gas Service Co., Kansas City, reported on a three way school picture. Carrying on the idea of the workshop theme "Accent on Youth" Miss Luthi stated that her company has carried on an extensive school program. At the start of each school year, the service department checks all gas equipment in each school and follows this with monthly checks throughout the year. The home service department then makes a personal call in each home making department and schedules care-and-use talks for school classes.

The same program is carried throughout the company properties and after the demonstrations are under way, the home economics teachers are invited to company auditoriums for a special dinner.

Two programs used by home service in the Minneapolis Gas Co. were "Talking About Charm," a demonstration given to clothing classes in the Minneapolis public schools, and "Club Matinee."

Marideanne Wolfe used a flip chart of colorful illustrative material on the subject of personal care and charm. Teen age chatter was used in the dialogue and through the demonstration the need for gas heated water was emphasized.

The purpose of "Club Matinee" demonstrations, as reported by Marilyn Johnson of Minneapolis, is to promote the sale of gas and gas appliances. Club women are invited to the gas company auditorium to hear the sales story.

"Explaining Gas Service to Architects," a talk by Mrs. Joyce Carlen, told of a Houston Natural Gas Corp. service offered to building industry architects. In addition to up-to-date literature on gas equipment, the company has provided an extensive display of built-in equipment for their use. It also sponsored a yearly contest for architectural students at Rice Institute and the University of Houston.

Students are assigned to design an all-gas kitchen and cash prizes are given to the two top winners. To assist them in their plans, students are supplied with gas literature and demonstrations of gas versus electricity are presented. Kitchen

Gas lights on all day in Philadelphia

The Quaker City is going to keep its old gas lights burning around the clock in 1958 and figures to save money by doing it—about \$130,000 for the year.

Here's how city fathers figure:

The city still has 7,513 gas lights, all due for replacement during 1958 by electric lights. The gas burners cost about \$54 each a year to operate and maintain. The biggest chunk of this is pay for the men who walk around each week winding the spring clock mechanism that turns the lamps on and off. So, the city will stop the clock-winding procedure, and lop about \$40 off the annual unit cost while gas consumption merely doubles to \$14 a light.

Total cost for burning the gas

lamps continuously this year will be only about \$21.40 each, compared with \$28.80 each for a residential electric street lamp, according to Harry Mason, the city's street lighting engineer.

What about Philadelphians' spotting the burning lamps and complaining their tax money is going up in smoke? "We anticipate a number of complaints when people see the lights burning during the day," says David M. Smallwood, city street commissioner. "This is a planned operation and will actually cost the city less money than if the lamps burned only at night. We're going to tell them about it."

—Reprinted from the *Wall Street Journal*.

building talks based on the homemaker's viewpoint in kitchen arrangement are added to the course.

"Selling Employees Automatic Blue Flame Cooking" was a presentation from the Florida Public Utilities Company in West Palm Beach, Fla. Mrs. Alice Buell told how employees were kept up to date in the operation of the company when presented by company officials and department heads and illustrated with up-to-date demonstrations on modern gas equipment.

"The Penny Flame" is the trademark of the Northern Illinois Gas Co. and Karen Morsch described the company trailer which has been designed to travel to areas not reached otherwise as easily by home service departments. Two complete kitchens, one an economy kitchen and the other de luxe, form the display with the equipment "live" by use of natural gas stored in bottles. The Penny Flame trailer provides a dignified exhibit which makes it of particular interest when taken to fairs and home shows. At least one home service girl is in attendance with the trailer on location.

Mrs. America (Mrs. Linwood Findley) appeared on the conference dinner program and told how home service

could assist state contestants before their appearance at the national finals in Florida. A Mrs. America film was shown to the delegates and Mrs. Dorothy Healy of the United Gas Improvement Co. further accented the value of the program in a talk "From Home Town to Fort Lauderdale." She suggested that home service could assist in the Mrs. America contest by briefing state delegates before they leave for the finals.

Many conference delegates visited the Southdale Shopping Center near Minneapolis. The suburban division of the Minneapolis Gas Company has an office in the Center and sponsored the tour with Elizabeth Boyle as hostess. Delegates were impressed with the block-long garden court built around 67 individual stores enclosed by a louvered skylight and entirely heated and cooled with gas-fueled heat pumps.

Workshop Committees were active throughout the planning of the Workshop conference. Mildred Endner, home service director, Minneapolis Gas Co., was in charge of local arrangements. Conference papers were assembled by Elizabeth Boyle of the suburban division.

A Hospitality Committee with Mrs.

Color concentration

After several years of manufacturing built-in ranges, Roper has decided to concentrate production on the five finishes it has found to be most in demand. They are petal pink, turquoise green, canary yellow, bronze porcelain, and satin chrome. Colors that have been discontinued are white, black, regency yellow, panchromatic sand, cocoa brown, Nile blue, cadet blue, and sea mist green.

Kathryn Johnson, Rockland Light and Power Co., Spring Valley, as chairman, and a Registration Committee chairmaned by Sarah Sicker, South Jersey Gas Co., Atlantic City, functioned through the workshop.

Presiding officers included Mildred Endner and Elizabeth Boyle, Minneapolis Gas Co.; Betty Jane Frahm, Montana-Dakota Utilities Co.; and Mrs. Eleanor Wiese, Public Service Electric and Gas Company, Newark, N. J.

Jessie McQueen, home service counsellor of the American Gas Association, was in charge of the general arrangements and planning of the program.

Women discuss kitchens at Congress on Better Living

WOMEN'S DELIGHT at the many comforts which home appliances make possible has mellowed into a warm appreciation, tinged with constructive criticism.

Suggestions for improvements for the benefit of appliances and home equipment manufacturers and dealers are brought out in material from the Congress on Better Living, which is sponsored by *McCall's*.

The material dealing with kitchens shows that business men can learn much from the women of America that would help them in their appliance sales. The women delegates, acting as spokesmen for 49 million American families, show that they have definite opinions about the function of appliances, since they are the major users. Their opinions encompass the shortcomings where they exist and possibilities for future development in design.

The report also shows that women are not always aware of appliance developments already on the market, or that sometimes they lack proper information about the new appliance models. More can be done to inform women with greater detail and greater persistence as to what is available.

Although not too many delegates owned dishwashers, it was their first preference of appliances they would like to have. All found that the broiler, as well as the range, was the most difficult appliance to clean. Not all were aware of ranges with removable

oven linings that are on the market: suggestions were made that there should be a disposable oven liner, as well as a removable one. The problem of cleaning a refrigerator also came in for some attention. Space problems were universal, including efficient storage space for small appliances.

The kitchen itself, according to the majority of delegates, should be larger, preferably U-shaped, and the sink should preferably be below a window. A U-shaped kitchen arrangement is favored because it requires a minimum of movement in preparing meals. The U-Plan also reduces traffic and interference from the rest of the family, according to one housewife. The sink with a window above it gives a feeling of outdoors. Many also like a peninsula sink.

The kitchen should also make provision for recreation for the diverse interests of every member of the family, for the kitchen has become a room for almost every family occupation and interest. Only three out of the hundred women delegates said that they consider the kitchen for cooking alone.

Among the uses made of the kitchen by the delegates are: meals and entertainment; laundry—washing, ironing and drying; accommodation for children's homework; sewing and hobbies; storage space.

An additional use for the kitchen was mentioned by a few delegates—that of an office, where besides entertaining and pre-

paring the day's meals, women can do their telephoning and social planning.

What women want most today is a larger, better integrated kitchen planned for all these activities. To fulfill these needs, more built-ins are requested; storage space should be easily accessible and centralized, and something should be done in every part of the kitchen to make it easier to clean. Scarcely ten per cent of the women at the Congress are satisfied with their present kitchen plan arrangements.

They recommend ranges that would be so designed to collect a minimum of dirt. Suggestions were made to eliminate space beneath refrigerators and between major appliances to ease cleaning problems.

Cabinets below knee level are disliked by these women because they are hard to reach. Other complaints include: poor design of kitchen cabinet space; the special care needed for floor coverings; lack of cabinets, cupboards, counters, drainboards; and inadequate light and ventilation.

Some women thought that the labor-saving devices required too much labor to keep clean and made these suggestions: the use of disposable oven liners and a removable broiler lining; more efficient ventilation of wall ovens; and the transference of the ice cube compartment from the refrigerator to the sink, where glasses and water supply are handy.

Industry news

Describe new designs of burners, pilots, valves

a PAR activity

NEW DESIGNS of gas burners and ignition systems to

reduce bulk and to improve performance of domestic gas range top sections are described in recently published Research Bulletin 76 issued by the American Gas Association Laboratories.

Bulletin 76, *Research on New Designs for Range Top Burners, Pilots, and Valves*, describes research performed at the A. G. A. Laboratories under the sponsorship of the Association's Committee on Domestic Gas Research as a PAR Plan Activity. Design techniques and performance characteristics of a number of small compact single duty experimental burners, related range top components, including burner ignition systems, and closed range top burner installations are discussed. This information should be of material assistance in the development of domestic gas range top burners having improved flexibility for use with various gases, improved performance, ease of operation, and reliability.

Recognizing the modern trend toward simplicity and convenience in home design and home services, the Committee on Domestic Gas Research, through its Technical Advisory Group for Domestic Gas Cooking Research, activated Project DA-2-C, "Study of Domestic Range Top Section Design," in 1952. The

objective was to develop improved top burners, ignition, and flexibility of operation. In addition, the various design features of range top sections were to be investigated in order to indicate possible methods of improving appearance, cleanability, safety, ease of operation, and effectiveness of heat application to cooking loads.

During the course of this research, a number of small, compact, single-duty experimental burner designs were developed for application to domestic gas range top sections. A commercially available range top section and a number of experimental burner boxes were used for housing the various experimentally developed burners.

Procedures similar to those specified in the current American Standard Approval Requirements for Domestic Gas Ranges were used to evaluate thermal efficiency and completeness of combustion. Heating speeds obtained in the study were based on a rise in water load temperature from 60F to 200F, and from 60F to the boiling point of water. The experiments were generally conducted from a cold start to simulate common cooking practice. The various utensils employed and the results obtained are discussed in the bulletin. Heat distribution at turndown rate and adequacy of turndown rate were also determined with the various experimental burners for a variety of cooking operations.

Bulletin 76 presents design techniques and performance characteristics for ledge-type flame retention burners, closed top power vented burners, slot-port and drilled-port flat flame burners, a ceramic radiant burner and a target burner with no primary air mixer tube. Discussion is also given on associated components such as control valves, aeration bowls, grates, and ignition means.

One small compact single-duty experimental burner which exhibited superior performance and flexibility was the modified "nickel" burner. The original "nickel" burner employed flame retention on a $\frac{7}{8}$ inch diameter burner head and is popularly known as the "nickel" burner because of its similarity to the size of a five-cent coin. This original "nickel" burner was demonstrated to the gas industry in 1954. The modified nickel burner, how-

ever, employs flame retention on a $1\frac{1}{4}$ inch diameter head and operates satisfactorily on all typical fuel gases without the need of an air shutter or its associated adjustment.

The available heat span of the modified "nickel" burner ranged from a turndown rate of 500 Btu per hour to a maximum of 23,000 Btu per hour on Cleveland natural gas. Heating speed tests indicate that, with various sized utensils, this burner can exceed the heating speed of any contemporary range top heating unit, regardless of the fuel employed.

Other experimental range top features developed in conjunction with the modified "nickel" burner to achieve desired performance included a low Btu pilot and a traveling pin valve. The application of this low Btu pilot, which consumes only 50 Btu per hour, made possible individual and almost instantaneous range top burner ignition, a substantial reduction in stand-by heat loss to the kitchen, and the elimination of range top surface hot spots. The traveling pin valve improved burner turndown rate controllability, provided improved primary air entrainment at all burner turndown rates, and contained a bypass means to permit the use of burners containing positive ignition and re-ignition features at any input rate.

Several demonstrations to the industry in 1954 of several of the developments described in Bulletin 76 tended to influence industry thinking and resulted in improved range top section performance in several instances. The most notable of these was the popular acceptance of the low Btu needle pilot and improvements in turndown performance. However, during the course of this research, the industry's interest shifted to top burners with physical shapes to accommodate existing temperature controls. Research is continuing with thermostatic control in mind as well as rear venting, flush range grate tops, and new experimental burner designs. This research, now under way, will be described in subsequent publications.

A. G. A. Laboratories Research Bulletin 76 was written by Patricia A. Speidel and F. G. Hammaker Jr. of the Laboratories. Copies may be obtained from the A. G. A. Laboratories at \$2 each.

Washington Natural sales increase surpasses expectations

ANOTHER YEAR of rapid growth was predicted for Washington Natural Gas Co. as Charles M. Sturkey, president, reviewed the progress made by the company in 1957, its first complete year of natural gas service.

Natural gas first became available to part of Washington Natural's service area early in October 1956. Since the arrival of natural gas, the company has added nearly 11,000

new customers for a net gain of 23.5 per cent.

Because of this increase, and as a result of substantial sales to industry, the company is two years ahead of schedule in gas sales revenues, Mr. Sturkey said.

"A study made in June, 1955, showed an estimate of \$7,194,000 total natural gas revenue in 1957. We will instead reach

\$11,000,000 or the figure our 1955 study predicted we would achieve in the year 1959," he said.

"During the two past years we completed the most costly part of our construction to expand our facilities to serve natural gas. With the sales momentum which has been generated, we expect 1958 to be an especially outstanding year," Mr. Sturkey said.

Pennsylvania association elects officers, directors for 1958

J. G. MONTGOMERY JR., president of the United Natural Gas Co., Oil City, Pa., was elected 1958 president of the Pennsylvania Natural Gas Men's Association at a meeting of the board of directors last month. Elected vice-president was D. B. Beecher, president of the Equitable Gas Co., Pittsburgh. P. L. Kesel, secretary-treasurer of the Carnegie Natural Gas Co., Pittsburgh,

was re-elected secretary-treasurer of the group.

At its annual meeting, the association re-elected the following members to the board of directors, in addition to Mr. Montgomery and Mr. Beecher: H. D. Borger, president, The Peoples Natural Gas Co.; J. E. Coleman, vice-president, Manufacturers Light & Heat Co.; R. L. Ehrman, vice-president, T. W. Phillips Gas & Oil Co.; H. D. Freeland of

Waynesburg; Jack Gaddess, president, North Penn Gas Co.; retiring president Christy Payne Jr., vice-president, The Peoples Natural Gas Co.; J. C. Peterson, president, Manufacturers Light & Heat Co.; H. H. Pigott, president, Carnegie Natural Gas Co.; F. N. Wolf, vice-president, Equitable Gas Co.; and A. W. Conover (honorary), chairman of the board, Equitable Gas Co.

Eilerts, Bureau of Mines scientist, receives high government award

C KENNETH EILERTS, a scientist at the Bureau of Mines Petroleum Experiment Station at Bartlesville, Okla., since 1930, has been granted the Department of the Interior's highest honor, the Distinguished Service Award and Gold Medal. Mr. Eilerts has an international reputation as one of the few authorities on phase relations of hydrocarbon mixtures, the Department said.

The petroleum and natural gas industry saves millions of dollars each year, the Department said, as the result of Mr. Eilerts' research on ways of retarding corrosion of oil-field equipment.

Mr. Eilerts has planned and is the main author of a two-volume monograph entitled

Phase Relations of Gas-Condensate Fluids, describing 20 years of research under his direction in cooperation with the American Gas Association. "It bridges the gap between laboratory research and engineering application," the Bureau said. "The first volume has been published by the Association, and leaders in his field of research who have read the complete manuscript have proclaimed it a monumental work that will stand as one of the great books of petroleum literature."

"For his devoted Government service, in which he has contributed so much to scientific petroleum conservation and the national welfare," says the citation accompanying his award, "the Department of the Interior is

proud to bestow upon Mr. Eilerts its highest honor, the Distinguished Service Award."

During World War II, Mr. Eilerts developed mobile equipment and test methods that aided the Petroleum Administration for War in allocating manpower and materials for production of aviation gasoline base stock and other critically needed fuels to the extent that he was presented the Government's Award of Excellence in 1944.

In 1947, a poll conducted by the *Chemical Bulletin*, publication of the Chicago Section of the American Chemical Society, placed Mr. Eilerts among the 10 "ablest chemists and chemical engineers working in the U. S. in the field of gas and fuel chemistry."

New gas appliance service manual published by A. G. A.

A NEW EDITION of the A. G. A. Gas Appliance Service Manual covering installation and servicing of more than 70 types of gas ranges, water heaters, clothes dryers and incinerators has been published by the Utilization Bureau of A. G. A.

The 540-page manual contains 370 illustrations and includes special features dealing with wiring diagrams, circuit checking pro-

cedures, single point ignition, electric ignition, clocks and timers, and automatic top burner heat control. It has been prepared in convenient size (5 $\frac{1}{8}$ inches by 8 $\frac{1}{8}$ inches) and has a metal ring binding for easy insertion of supplementary pages which are issued every four months.

The new Service Manual is available from A. G. A. at prices ranging from \$3.25 for a

single copy to \$2.50 each in quantities of more than 100. Subscription prices for three years of supplement service range from \$3.25 for one to \$2.25 for more than 100.

The manual and supplement service are available separately, and purchasers of the first edition of the manual, published in 1954, can bring the material up to date by subscribing to the supplement only.

A. G. A. commercial water heating campaign now in swing

THE 1958 A. G. A. commercial gas water heating sales campaign affords gas companies the opportunity to promote one of the richest year-round loads during the months of February, March, and April.

This campaign also enables gas companies to capitalize on the big national advertising push A. G. A. will give to gas water heating in the leading trade publications and national magazines.

A new all-inclusive portfolio has gone out to gas company sales managers and contains

basic data and materials to organize and pursue a profitable sales campaign.

This activity guide book sets forth the necessary steps to be taken to put this campaign into operation. It is set up in such a flexible manner that the procedures can be adopted by the smallest or largest gas company.

Direct mail selling is stressed and the portfolio contains many suggestions for sales letters together with manufacturers' literature and other sales helps. A number of case

histories are included on past sales activities of several gas companies. Contests are also suggested and detailed for use during the campaign.

The guide book also gives complete information how to organize the sales force, how to secure cooperation of dealers, and how to conduct workshop meetings for regional restaurant and sanitation organizations. The activity guide book is available free of charge from the A. G. A. Industrial and Commercial Gas Section.

Lift restrictions

GAS HEAT is now available to everyone in the communities served by Michigan Consolidated Gas Co., following the Michigan Public Service Commission's recent lifting of restrictions on the number of space heating permits which the utility could issue. The utility expects 55,000 additional heating installations this year, and 54,000 next year. This would mean that by January 1960, about 70 per cent of the company's customers would be using gas heat.

20-year contract

LONE STAR Producing Co., subsidiary of Lone Star Gas Co., has consummated a 20-year contract for sale to United Gas Pipe Line Co., of its recently discovered gas reserves in the Fashing (Edwards Lime) field in Atascosa County, Texas. Delivery from Lone Star's Fashing field properties to United Gas will begin this summer, upon completion of a 10-well drilling program and gas gathering and treating facilities. Lone Star's estimated gross revenue from sale of gas and condensate from Fashing field will be about \$4.5 million annually.

Brooklyn Borough wins fleet safety contest



G. A. White (l.), secretary of Greater New York Safety Council and Lt. Jack Dillon of Safety Education Bureau of New York City Police Department congratulate President Walter M. Jeffords Jr. (r.) on Brooklyn Borough Gas Co.'s first place spot in the Greater New York Inter-Fleet Accident Reduction Contest. Each of Brooklyn Borough's 84 authorized drivers was presented with a U. S. Bond

Piedmont celebrates 50,000th customer



Participating in a ceremony which took place before an armored car delivered this 14-carat gold meter to Piedmont Natural Gas Co.'s 50,000th customer were (l. to r.): R. J. Nery of North Carolina Utility Commission; J. J. Sheehan, Piedmont vice-president; Buell G. Duncan, Piedmont president; Murray Hitchcock of American Meter making presentation; H. F. Cain, measurement superintendent

IGT publishes study on absorption cooling process

THE ABSORPTION CYCLE has proved of such importance that it merits continued development, but the dearth of literature information on this cycle has made it difficult for new investigators to work in the field without duplicating much of the research done by others.

That dearth prompted the American Gas Association's task group for air conditioning to initiate, at the Institute of Gas Technology,

an extensive literature search on the theory of the closed absorption cycle, applications of the cycle, the chemical and thermodynamic properties of absorbents and refrigerants, and factors to be considered in attempts to develop improved absorbent-refrigerant combinations.

The results of this study have been published in IGT Research Bulletin No. 14, *The Absorption Cooling Process—A Critical Lit-*

50th SGA convention

THE golden anniversary convention of the Southern Gas Association will be held in Dallas, Texas, April 28-30. A record-breaking attendance of 2,200 or more is anticipated, according to Scott Hughes of Dallas, general convention chairman. A gala "Gas Industry Week" is being planned for Dallas at convention time, and special events will focus attention on the important role of natural gas for home, office and factory. In addition, the convention program will trace the rise of the natural gas industry and will show how natural gas has helped in the South's remarkable growth over the past 50 years.

International conference

THE COUNCIL for the International Gas Union will hold its seventh International Gas Conference in Rome, Italy, Sept. 22-25. About 50 papers and reports will be presented and discussed during the technical sessions and a record attendance is expected. Arrangements have also been made for visits to gasworks for the participants and excursions for the ladies.

erature Review, by R. T. Ellington, G. Kunst, R. E. Peck and J. F. Reed. It presents a review of the closed systems currently employed in domestic and commercial air conditioning, and tabulations of physical and thermodynamic data for the absorbent-refrigerant combinations used. Appended is an extensive cross-indexed compilation of literature sources of data on many combinations which have been considered.

Memphis case impact postpones \$182 million expansion program

THE impact of the Memphis decision has brought about postponement of a \$182 million expansion program affecting natural gas consumers in the Rocky Mountain and Midwest market areas, according to W. E. Mueller, president of Colorado Interstate Gas Co., Colorado Springs.

The companies which joined in announcing the postponement of the Beatrice Project expansion program are Colorado Interstate;

Natural Gas Pipeline Co. of America, a transmission subsidiary of Peoples Gas Light and Coke Co., Chicago; and Pacific Northwest Pipeline Corp., Salt Lake City.

The Beatrice project is designed to boost the supply of natural gas in the Midwest area, principally Chicago. It also provides for increased and more dependable service in the Rocky Mountain area. The plan was approved by a Federal Power Commission

examiner on Oct. 9.

His ruling now is subject to final decision by the Commission itself.

The joint announcement expressed a determination to proceed with the Beatrice project construction as soon as possible. It added, however, that the problems raised by the Memphis decision necessitated postponement of delivery of pipe and other materials scheduled for the early part of next year.

Nine IGT scholarships available for engineering students

SCHOLARSHIPS enabling chemical and mechanical engineering students to prepare for careers in the gas utility industry are available at Illinois Institute of Technology.

Nine scholarships providing full tuition for four years will be awarded to out-of-state students in May 1958. Five of the awards have been established by IGT through con-

tributions from the gas industry.

Recipients of these awards will be selected by the following companies from high schools in their areas: The East Ohio Gas Co., Brooklyn Union Gas Co., Panhandle Eastern Pipeline Co., Cincinnati Gas and Electric Co., The Columbia Gas System, and the Consolidated Natural Gas System. Recipients will be se-

lected on the basis of high school record, interview of high school principal, interview of representative of local gas company, and performance on IIT entrance examinations.

Further information may be obtained from: Rex T. Ellington, Chairman, Educational Program, Institute of Gas Technology of Illinois Institute of Technology, Chicago 16, Ill.

New York Natural slates \$12 billion for improvements this year

NEW YORK STATE Natural Gas Corp. plans an investment of nearly \$12 billion for additions and improvements during 1958.

Among the major projects to be included are the drilling of 38 new wells at a cost of \$3.9 million; re-drilling and re-conditioning

19 wells for storing gas in the company's Woodhull storage pool in Steuben County, N. Y., along with the laying of lines and installation of gas compression engines at a cost of \$2.4 million; replacement of 20-inch pipe with 30-inch pipe in a 12-mile section

of the line between Boom compressor station near Lawrenceville, Pa., and the Ithaca, N. Y., station to cost \$1.9 million; replacement of 13 miles of 12-inch pipe with 20-inch line between Harrison and State Line stations in Potter County, Pa., at nearly \$1 million.

Portland Gas & Coke to shut down byproducts operations

PORTLAND Gas & Coke Co. will shut down its byproducts operations early this year, reducing its oil-gas plant in north Portland to a minimum standby facility and reducing payroll by about 250 jobs, nearly one-fourth of the company's total.

Executive Vice-President James F. Bell, in reporting this decision, explained that marketing prospects for the company's petrochemicals, particularly electrode pitch used by the aluminum industry, are so weak that heavy operating losses at the plant would have been inevitable.

"We could not expect our natural gas rate payers to underwrite such a burden, even though it would save the plant's payroll," Mr. Bell said.

Though no U.S. gas utility ever has retained a plant which manufactured gas from oil, after obtaining a source of natural gas, the Portland company made an intensive effort to keep its plant going on a year-around basis by transforming it into primarily a petrochemical operation.

Over a period of 40 years the plant had developed one of the strongest byproducts businesses in the entire gas utility industry, producing carbon, electrode pitch, benzol and other products while extracting gas from heavy oil.

Research was rushed in the past year to change the plant over so that oil-gas would become a minor product, and the first successful large run of a new oil feed stock had been

made, Mr. Bell said.

Since conversion of the PG&C system to natural gas 14 months ago, the plant has taken tars from the feed stock and no longer any carbon, much of which once went into briquettes. Further refining yields primarily pitch, used as a carbon binder for electrodes in aluminum reduction plants.

But prospective markets for pitch and the other chemicals are far short of the output needed to break even financially, Mr. Bell explained. A major shift in America's defense spending is a factor, as this has led to sharp cutbacks in aluminum production.

The company's largest job reductions will take place after April 1, and the plant will be on a standby basis by mid-June.

Pre-dawn flaring ceremony launches Quebec conversion program

IN A DRAMATIC pre-dawn flaring ceremony, Quebec Natural Gas Corp. launched its 250,000 customer conversion program at 4 a.m., Jan. 7, at a selected street location in the first conversion district. This is the largest conversion project in Canada.

The ceremony, attended by company officers and directors, was inaugurated with a blessing by the pastor of the nearby church. He was followed by Maurice Forget, president of the company, who said: "This new flame, now burning for the first time in our Montreal area, is a symbol of a new fuel energy for public service. It marks the dawn of a new era in which metropolitan Montreal will have continuously available the greatest natural gas energy supply of any city in Canada."

We dedicate this natural gas to the service of the people, their homes and businesses, and to the industrial progress of our area."

Kenneth B. Lucas, vice-president and general manager, then joined the pastor and Col. Forget in applying the pilot torch to the flare, extending from a standard about eight feet above street level adjacent to the manhole connection. The first flame had the characteristic color and sound of the manufactured gas burning off. As the natural gas moved into the line, there was a noticeable change in the color and sound, with the brilliant blue and quieter flame typical of future uses.

Press, radio and TV were represented at the ceremony. The essential bilingual French

and English news stories were distributed. TV coverage was filmed by CBC for both its French and English news broadcasts. Radio interviews were also taped. A mobile coffee and soup canteen was provided by Quebec Natural.

Mr. Lucas explained that "The conversion program alone represents a \$6 million cost as a necessary part of bringing natural gas into public service here. But all conversion work will be done at no cost to our customers. This is one of our major steps in the company's long-range program of expansion and improvement of gas facilities for public progress. We now foresee at least five years of construction and development work ahead of us."

Safety award

THE PRODUCTION department of the Michigan Consolidated Gas Company was recently awarded an A. G. A. Safety Merit Award for achieving a record of over a million manhours without a lost-time accident. The formal presentation was made at a luncheon meeting of the Citigas Executives' Luncheon Club at the Detroit Leland Hotel. A. V. Brashear, manager of operations, made the presentation to George Bentley, superintendent of the production department.

Enters production field

AMERICAN NATURAL Gas Co. announces the organization of a new wholly-owned subsidiary, American Natural Gas Production Co., for the purpose of the exploration and production of oil and gas. Varnum B. Steinbaugh has been elected president of the new subsidiary and S. A. Womack, Jr. has been appointed manager of operations. American Natural Gas Production Co. has opened offices in the new Oil Center, Lafayette, La.

Rheem expands

RHEEM Manufacturing Co. has completed new arrangements for making and selling Rheem products in Belgium and Canada. The new agreements bring to 18 the number of plants making Rheem products in 12 nations abroad. The new international agreements call for manufacture and sale in Canada of Rheem automatic storage water heaters and manufacture and sale in Belgium of Rheem water heaters and inner-protective coatings for steel drums and pails.

Sales conference held

THE Florida-Georgia Gas Association held a sales conference at the Tampa Terrace Hotel, Tampa, Fla., Jan. 16-18. Chairman of the meeting was J. W. Owen of the Tampa Gas Co. The main sessions of the meeting were held on Jan. 17. The first speaker was Frank W. Williams, secretary of the A. G. A. Residential Gas Section, on the topic "Cut Yourself a Piece of Cake." He was followed by R. M. Marberry, general sales manager of Whirlpool's gas utility division, who discussed the future of the gas refrigerator lines recently purchased by Whirlpool from Servel. In the afternoon, speakers were E. Carl Sorby, president of the Geo. D. Roper Corp., and J. M. Townsend, southern regional sales manager of the Arkla Air Conditioning Corp. On Jan. 18, Mr. Williams led a roundtable discussion at which sales managers presented outlines of successful sales campaigns.

Record budget

IN THE past five years, Public Service Electric and Gas Co. made expenditures of over \$500 million for gas and electric additions and improvements to plant, reports Donald C. Luce, president. Because of the continuing growth in demands for electric and gas services, Mr. Luce says, the company's construction program contemplates expenditures for additions and improvements in 1958 of approximately \$160 million. This will be an all-time record of construction expenditures for the company, and will exceed by about \$30 million the record expenditures in 1957.

The increasing use of gas for heating is the major factor requiring that additions and improvements be made to the company's gas properties. During 1958, the company plans to install 270 miles of gas mains and 27,000 gas meters.

Opening ceremonies

CEREMONIES officially opening the new \$765,000 Eastern Division headquarters building of the Southern California Gas Co. were held in San Bernardino recently. Civic officials, community leaders, representatives of service clubs, the press and the general public had an opportunity to view the new facility during the week-long open house. President and General Manager F. M. Banks marked the official beginning of operations at the new office at ribbon-cutting ceremonies. The ultra-modern building serves as headquarters for all gas company operations in Riverside and San Bernardino counties. In all, the project called for modernization of the existing building and incorporation of it into a four-fold greater structure. Tying the new and the remodeled together architecturally is a distinctive sweep of horizontal louvers across the front of the building.

Inspect A.G.A. photographic display



Those present at the American School Food Service Association convention in St. Louis showed great interest in the A. G. A. booth, manned by employees of Laclede Gas Company. Above, several delegates are inspecting the A. G. A. display of photographs depicting local school cafeteria installations.

Southern Counties budgets over \$22 million for construction

THE second largest annual construction budget in its 47-year corporate history has been earmarked for 1958 by Southern Counties Gas Co. The natural gas distribution utility's 1958 budget of \$22,850,000 was topped only by the \$24,406,000 marked for capital improvements in 1957. The company's 1956 budget was \$19,724,000.

At the same time Southern Counties' President and General Manager Guy W. Wadsworth Jr. reported the company expects a

net addition of 48,000 customers next year.

Mr. Wadsworth said 1958 will be the fourth year in a row Southern Counties has made provision for a net increase of more than 45,000 customers per year. The utility at year-end 1957 was serving more than 640,000 customers.

Almost half of the 1958 construction budget—or more than \$11 million—has been allocated for equipment to bring gas service to customers not now connected to the com-

Con Ed publication

A 10-YEAR history of Consolidated Edison Co. has been presented attractively in a 52-page booklet describing by text and photographs many of the company's operations. The booklet, aimed mainly at the financial community, offers financial statements and operating statistics.

Allen honored

THOMAS H. ALLEN was the recent recipient of the Nathan W. Dougherty Award for Distinguished Service in the Engineering Profession for 1957. An award dinner for Mr. Allen was held at the University of Tennessee, and among the speakers was Mr. Dougherty, dean emeritus of engineering, in whose honor the award was presented. Mr. Allen has been with the Memphis Light, Gas and Water Division since 1934, with service as vice-president and chief engineer, chairman of the board, and president. When the gas and electrical distribution systems were purchased by the City of Memphis, he was appointed president of the Division.

pany's lines. Altogether the utility in 1958 expects to add more than 1,100 miles of pipeline of various sizes to its distribution system, Mr. Wadsworth said.

Other major expenditures in the budget are \$4,197,000 for additions to the company's transmission system; \$4,037,000 for replacement or relocation of older mains and services; and \$2,773,000 for new buildings. The last total makes provision for a 13-story headquarters in downtown Los Angeles.

Council heads elected, Ainsworth and McNair promoted at ASA

T. E. VELTFORT, managing director of the T. Copper and Brass Research Association, has been elected chairman of the Standards Council of the American Standards Association, and Harold Massey, managing director of the Gas Appliance Manufacturers Association, has been elected vice-chairman. This Council, the judicial body of ASA, is respon-

sible for the association's technical program. It is composed of representatives of 65 national industrial, technical, and consumer organizations.

The association also announces promotions within its staff. Cyril Ainsworth, technical director, has been appointed deputy managing director, and will continue to serve as as-

sistant secretary. J. W. McNair, assistant technical secretary, and for many years in charge of the group's electrical and photographic work, will succeed Mr. Ainsworth as technical director. Mr. McNair was also appointed as an assistant secretary.

George F. Hussey Jr. was re-elected managing director.

Highlights of cases before Federal Power Commission

Bureau of Statistics, American Gas Association

Certificate cases

- Cities Service Gas Co. filed an application with the FPC seeking authority to construct a 7,000 horsepower compressor station and 24 miles of pipeline in Kansas. Cities Service also will abandon nearly 13 miles of pipeline and 19,000 compressor horsepower engines, of which some are to be reclaimed for use in a new station. The over-all cost of these proposals is estimated at \$3.6 million, and will enable the company to increase peak day deliveries from storage fields by 99 million cubic feet.

- El Paso Natural Gas Co. was granted temporary authority by the FPC to construct in Texas nearly 40 miles of pipeline with appurtenant metering facilities to expedite the purchase of from 10 to 14 mil-

lion cubic feet of residue gas now being flared at the Santa Rosa Gas Co.'s processing plant. Estimated cost of the project is \$946,000.

- Gulf Interstate Gas Co. received authorization from the FPC to construct and operate nearly 13 miles of loop lines in Louisiana at an estimated cost of \$730,000. These facilities will enable company to transport an additional 44 million cubic feet of gas daily for its only customer, the United Fuel Gas Co.

- Missouri Transmission Co. has filed an application with the FPC requesting authority to construct and operate a 256 mile 16 inch pipeline from the Missouri-Oklahoma border to the St. Louis, Mo., area at

an approximate cost of \$22 million. Recently organized, Missouri Transmission plans to serve a plant near St. Louis operating under an AEC contract, and other customers along the route. Gas supply will come from Mookl Chemical and Gas Corp. pipeline, which also has filed an FPC application for the construction of a line from Pottawatomie County, Okla., to the Missouri border connection.

- New York State Natural Gas Corp. was authorized by the FPC to construct and operate nearly 57 miles of 30 inch pipeline replacing a smaller 20 inch line at a cost of \$7 million, including installation of an additional 2,000 compressor horsepower at its Boom station. This authorization is the final stage of a four-year re-

placement program (12.0 miles in 1955, 17.0 miles in 1956, 14.6 miles in 1957) for which temporary authority was granted previously, and now includes 12.9 miles in 1958. The entire line, extending from Tioga County, Pa., to Ithaca, N. Y., will increase peak day deliveries at the Boom station to 502 million cubic feet daily in 1959 for the benefit of North Penn Gas, Corning Natural Gas, New York State Electric and Gas Corp., and Niagara Mohawk Corp.

● **Permian Basin Pipeline Company** filed an application with the FPC seeking authorization to acquire a 1350 horsepower compressor unit from Phillips Petroleum, and to turbocharge six compressor units. The unit to be purchased for \$332,000, together with the turbocharging, at a cost of \$565,000, will increase capacity at the Andrews station, Texas by 4,050 horsepower to a total installed horsepower of 20,250. In another action, the FPC granted the company authority to construct and operate about 27 miles of pipeline in Texas at a cost of \$787,000 to be used for purchasing residue gas from three independent producers.

● **Texas Eastern Transmission Corp.** and subsidiary, Wilcox Trend Gathering System, Inc. have filed applications with the FPC requesting authorization to construct and operate natural gas facilities at a total cost of \$4 million. Applications are of a budget type designed to eliminate numerous 1958 filings as required to attach new reserves from producers in the area.

● **United Gas Pipe Line Co.** has filed a budget type application with the FPC requesting authorization to construct and operate natural gas facilities as needed during 1958 for the purpose of connecting new gas supplies as purchased. Over-all construction in this application will not exceed \$3 million, and single connections will be limited to a cost of \$400,000.

Rate cases

● **Natural Gas Pipeline Co. of America's** proposed annual wholesale natural gas rate increase amounting to \$6.4 million, or 11.4 per cent annually, has been suspended by the FPC. The commission also suspended the requested annual wholesale rate increase of \$2.7 million, or 5.6 per cent annually, proposed by its affiliate, Texas Illinois Natural Gas Pipeline Co. Both increases will become effective May 28 subject to refund if proceedings have not been concluded. Natural Gas Pipeline has been collecting, subject to refund, a \$10 million increase since March 2, 1955, and a \$5.4 million increase since August 11, 1957. Both companies claim higher operating costs and a 6.5 per cent return. Natural Gas Pipeline also claimed an average weighted field price of gas for its own production in lieu of actual costs. Wholesale customers in Missouri, Illinois, Indiana, Kansas, and Wisconsin would be affected by the increases.

Ohio Fuel displays heavy-duty equipment



Ohio Fuel Gas had six booths of heavy-duty cooking, water heating, and incineration equipment at the recent two-day Ohio School Boards Convention and Exhibit in Columbus, attended by over 3,500

● **Texas Gas Transmission Corp.** filed with the FPC a proposed \$1.5 million or 1.8 per cent annual wholesale natural gas rate increase in substitution for a \$3.4 million increase suspended by the commission last July. The company is continuing to collect an \$8.7 million annual increase, subject to refund. This latest filing is a result of conferences between the company and 55 utility customers in Arkansas, Illinois, Indiana, Kentucky, Louisiana, Mississippi, Ohio, and Tennessee and is based on higher costs, principally the cost of purchased gas.

In another action, a natural gas tariff change proposed by American Louisiana Pipe Line Company providing for a demand-commodity form of rate instead of the cost-of-service type of rate, has been rejected by the FPC for the second time. The commission will consider a later request from the company based upon two years of operating experience, or after a test period based upon 12 months of actual experience. The proposed changes would affect affiliated companies serving customers in Michigan, Wisconsin, Illinois, Iowa, and Missouri.

In a recent rate proceeding affecting Tennessee Gas Transmission, the FPC modified a decision by the presiding examiner who would have disallowed the inclusion in the cost of service of \$500,000 authorized by the board of directors of Tennessee to be spent in an advertising program beginning September 1954. The staff recommended allowing only \$96,796 actually spent on the program in 1954.

The presiding examiner stated that no facts or data established that the advertising had resulted in any reduced costs of financing or lower rate of return for the company; and that it would not be proper to reflect in the cost of service these expenses when test year revenues are not being adjusted upward correspondingly to reflect increased sales which are expected to result from such advertising expenses. The

commission, however, maintained that a utility is entitled to include in its costs a reasonable amount for advertising purposes, and up to a certain point the size of the amount lies in the discretion of management. The criteria relied on by the presiding examiner would make it difficult if not impossible for a company ever to sustain any advertising expenditures. On consideration of the amounts involved in relation to the magnitude of the company's operations, the extent of advertising expenditures in the past by utilities generally in relation to the size of operations, the nature and object of the advertising expenses, and the extent to which benefits commensurate with the expenditures in question may reasonably be expected to flow therefrom, the commission concludes that the \$96,796 expended by the company in 1954, the allowance of which was initially recommended by the staff is reasonable and should be allowed.

SUMMARY OF INDEPENDENT GAS PRODUCER RATE FILINGS—NOVEMBER 1957

	Number	Annual Amount
Tax rate increases allowed without suspension	192	\$ 717,959
Other rate increases allowed without suspension	193	3,345,805
Rate increases suspended	57	2,091,416
Total rate increases	442	6,155,180
Tax rate decreases allowed without suspension	152	135,281
Other rate decreases allowed without suspension	2	286
Total rate decreases	154	135,567
Total rate filings	1,873	
Total rate filings acted on from June 7, 1954, to November 30, 1957	26,410	
Rate increases disposed of after suspension	—	54
Amount allowed	—	—
Amount disallowed	—	—
Amount withdrawn	—	54
Rate increases suspended and pending as of November 30, 1957	753	\$35,525,153

New Bedford Gas brings educational exhibit to area

AS A PUBLIC SERVICE, New Bedford (Mass.) Gas and Edison Light Co. has brought to New Bedford "Schoolroom Progress U.S.A.," the famous traveling exhibition sponsored by the Henry Ford Museum and Greenfield Village of Dearborn, Mich. For the next three to five years, the exhibition, which is co-sponsored by the Encyclopedia Americana, will tour about 250 cities in the

United States.

The exhibit is open to the New Bedford public at no charge between Feb. 5 and Feb. 12. It depicts the dramatic progress which has taken place in American schoolroom facilities during the past century. The "then-and-now" scenes are installed in two long railroad cars, with one containing life-size reconstructed models of three typical

19th century schoolrooms. All of the items are from the Henry Ford Museum.

According to Ralph W. Miller, executive vice-president of the New Bedford utility, the exhibition has three purposes: "To encourage an ever-increasing interest in teaching as a profession; to pay tribute to the contribution of the American teacher; and to increase interest in our schools and school facilities."

A.G.A. announces new publications issued during January

The following publications were issued last month and are now available from the American Gas Association Order Department. When requesting any of these publications, please mention the Bureau or Department under which it is listed.

ACCOUNTING

• **Compendium Committee Report, 1957.** Cost is \$2 a copy for A. G. A. members, \$4 for non-members.

RESEARCH

• **Phase Relations of Gas Condensate Fluids, Monograph 10, Volume I,** by Kenneth Eilerts. Available at \$10 a copy.

• **Investigation of Sampling Procedure Requirements,** by Arthur D. Little, Inc. Available at \$2 a copy.

• **Gas Storage at the Point of Use,** by Stone and Webster Engineering Corp. Available at \$3 a copy.

RESIDENTIAL

• **Desirable Features for Automatic Gas Water Heaters.** Sponsored by Gas Industry Development Committee, and available at 25¢ a copy.

STATISTICAL

• **Monthly Bulletin of Utility Gas Sales, December 1957.** Free of charge.

Pipeline corrosion to be major topic at NACE meeting

CORROSION of metals underground, especially gas and oil pipelines and production equipment will get a major share of attention in the technical program of the 14th

annual conference and exhibition of the National Association of Corrosion Engineers. The conference will be held March 17-21 at San Francisco. Many technical committees

will discuss matters in these same industrial fields. Symposiums will cover such topics as cathodic protection, oil and gas production, pipelines, and plastics.

Acquires rights

ECLIPSE FUEL Engineering Co. has acquired exclusive rights to patents, manufacturing, and sales of the vane-type indicating flowmeters developed by R. A. Ekstrom & Co. The line of flowmeters includes five basic styles for gases and liquids available to handle a variety of ranges and pressures up to 2000 psi. Previously marketed as Seico Flowmeters, the line will now be integrated into the Eclipse organization and still referred to as Seico Indicating Flowmeters. Products will be handled by the Seico Instrument Division of Eclipse.

New Siegler division

SIEGLER CORP., of Anaheim, Calif., has established a separate division for its Centralia, Ill., space heating operation to be known as the Siegler Heating Co. Walter G. Ullman has been appointed president and Norman E. Grandt has been named first vice-president of the new division. Both are also vice-presidents of Siegler. Ben F. Ostergren has been appointed vice-president in charge of sales of the new division. Headquarters of the Siegler Heater Co. will be in Centralia, Ill., where the firm manufactures space heating equipment.

Acquires Timken division

THE Timken Silent Automatic Division of Scaife Co., Pittsburgh, Pa., was acquired by Iron Fireman Manufacturing Co., Cleveland, on Jan. 1. This division manufactures and distributes residential heating equipment, including oil and gas-fired burners, furnaces and boilers. Iron Fireman also announced that headquarters of the division will be moved to Cleveland, and that it will begin manufacture of the Timken Silent Automatic line of heating equipment at its Cleveland plants as soon as arrangements can be completed.



C. C. Winterstein

retired since October 1955 from the Philadelphia Gas Works, died on Jan. 2. He was well known for his many and varied contributions in matters of gas utilization, standardization, testing and research, and was honored on several occasions for his outstanding work for the advancement of the gas industry.

Mr. Winterstein had 45 years of PGW and system company service when he retired. He became manager of the company's appliance laboratory in 1923. He worked in this capacity with the UGI Contracting Co. and The United Gas Improvement Co. until 1941, when he became supervisor of PGW's appliance laboratory. He remained in this post until his retirement.

George MacLean

president of Allcraft Manufacturing Co., Inc., Cambridge, Mass., died Nov. 25.

For many years, Mr. MacLean was associated as an executive with Whitehead Metal Products Co., before assuming his duties as president of Allcraft.

A resident of Rockport, Mass., Mr. MacLean was president of the Granite Savings Bank of that town. He was a member of the A. G. A. and GAMA.

Allen L. Chickering

vice-president, San Diego Gas & Electric Co., died last month. He served the organization in that capacity for 36 years and had also been a member of the board of directors for 34 years at the time of his resignation from the board in September 1956.

Mr. Chickering was a member of the San Francisco law firm, Chickering & Gregory,

general counsel to San Diego Gas & Electric Co. His son, Sherman Chickering, who is also a member of the law firm, succeeded his father on San Diego Gas & Electric Co.'s board of directors and is a member of the utility's Executive Committee.

Allen L. Chickering was also a director and Executive Committee member of Pacific Gas & Electric Co., Pacific Telephone & Telegraph Co., Southern Pacific Co., and a director of Caterpillar Tractor Co., Schmidt Lithograph Co., Founders' Fire & Marine Insurance Co., and Riverside Cement Co. He was a graduate of the University of California and Harvard University Law School.

A. Warren Egger

57, comptroller and assistant secretary for Central Illinois Light Co., died Jan. 12 at his home in Pekin, Ill. Mr. Egger had been associated with the company throughout his entire business life, joining the organization as a clerk in the Pekin office in 1919.

Tollefson, Cooper, elected at Consolidated; Dougherty retires

WILLIAM A. DOUGHERTY, chairman of the board of directors and general counsel, has retired from Consolidated Natural Gas Co. under the company's retirement plan. At the time it was announced that E. H. Tollefson has been elected to the office of executive vice-president and C. William Cooper has been named general counsel. James Comerford continues as president and chief executive officer and the post of chairman will not be filled.

Mr. Dougherty has been a director and general counsel of the company since its



W. A. Dougherty



E. H. Tollefson



C. W. Cooper

organization in 1943 and during that time was also a vice-president until his election as chairman in 1956.

Mr. Tollefson has been a director of the company since May 1954. He has been vice-president in charge of planning and gas sup-

ply since May 1956 and will continue to direct those activities. Mr. Tollefson was president of Hope Natural Gas Co., a subsidiary, from 1953 to 1956, and his association with the system companies dates from 1930.

He was graduated from the University of Minnesota with the degree of Engineer of Mines and received his M.S. degree from the same university.

Mr. Cooper has been a vice-president of the company since 1943, assistant general counsel since 1951, and a director since 1955. As general counsel he will have charge of the system's general legal affairs and its rate case activities. Mr. Cooper was graduated from Lehigh University with a B.S. degree, and he received his law degree from Harvard Law School. He is a member of the bar in New York and Pennsylvania.

Personal and otherwise

Mohlin president

RAGNAR J. MOHLIN has been appointed president of Allcraft Manufacturing Co., Inc., Cambridge, Mass. He has been associated with the company since its start as vice-president and chief engineer. Formerly, he was on the engineering staff of the Whitehead Metal Products Co. Also newly appointed at Allcraft is C. H. Ackerman, to the post of vice-president in charge of water heater sales. Mr. Ackerman has long been in the water heater field, having been New England branch manager and distributor for Ruud. For the past five years he has been associated with Allcraft as a utility representative.

Cochrane president

WILLIAM H. COCHRANE was elected president of Neptune Meter Co. effective Feb. 1, succeeding Dante E. Broggi. Mr. Broggi, in submitting his resignation as president and director, expressed the desire to be relieved of the detailed responsibilities of management to enable him to devote most of his time to outside personal interests. He will continue to serve as a consultant to Neptune. The newly elected president was previously executive vice-president of Neptune, responsible for coordinating policies and operations affecting administration, manufacturing and sales activities among Neptune and its subsidiary companies.

Fleck retires, Farley succeeds as comptroller of NYSE&G

JOSEPH F. FARLEY was elected comptroller of New York State Electric and Gas Corp. to succeed H. C. Fleck, who retires this month.

Mr. Farley's entry into the utility field was as an office boy and meter reader in 1916 for the Queens County Water Co. During his 13 years of service there, he rose to head of the accounting department.

He joined the reports division of NYSE & G in 1929. Subsequently, he served in

various supervisory capacities in the accounting and auditing department until his appointment as assistant comptroller in 1945.

Mr. Farley has been very active in the A. G. A. Accounting Section, and has served as chairman of that Section's Employee Relations Committee.

Mr. Fleck, who is retiring after 31 years of service, has been comptroller since 1941. From 1919-23 he was a statistician for a public utility consulting firm. The following two

years he was assistant to the auditor and director of public relations for Continental Gas & Electric Corp. In 1924-25, he engaged in private practice as a public utility consultant. He joined Utility Management Corp. in 1926, and for 13 years specialized in regulatory accounting matters including the merger of about 100 companies into New York State Electric & Gas.

He is a member of the American Gas Association.

Northern Natural promotes three officers to senior vice-presidents

THREE OFFICERS of Northern Natural Gas Co. have been promoted to the positions of senior vice-presidents. They are A. B. Dilworth, M. L. Mead and Larry Shomaker. They will serve as the Executive and Policy Committee for the company's management board.

Mr. Dilworth and Mr. Shomaker have been with Northern since the first year of the company's incorporation in 1930. Mr. Mead joined Northern

the following year.

The areas of responsibility for the senior vice presidents are as follows: Mr. Dilworth

will give particular attention to the policy areas related to increased earnings per share for stockholders and to decreased costs of gas to consumers; Mr. Mead will concentrate on policy areas concerned with research and diversification; Mr. Shomaker will be responsible for the broad top level policy and executive areas of public relations and associated fields.

Mr. Dilworth has been a vice-president since 1948, Mr. Shomaker since 1950 and Mr. Mead since 1952.

All three men are members of the American Gas Association.

Mr. Shomaker was chairman of A. G. A.'s General Management Section in the 1955 Association year.



A. B. Dilworth



M. L. Mead



Larry Shomaker

ALG elects Stephens president, Weir executive vice-president



W. R. Stephens



D. W. Weir

W. R. STEPHENS has been elected president of Arkansas Louisiana Gas Co., succeeding the late J. C. Hamilton who died Dec. 19. Mr. Stephens has been chairman of the board of Arkansas Louisiana since Jan. 1, 1957, and will continue in that position, also.

D. W. Weir was elevated to the newly created position of executive vice-president and elected to the board of directors of the company. Lindsey Hatchett also was elected a new vice-president of the company. Mr. Weir previously has served as a vice-president and Mr. Hatchett has worked on special assignments for ALG for several years.

In addition, William G. Wepfer was appointed national sales director for a subsidiary, Arkla Air Conditioning Corp., makers of Arkla-Servel Sun Valley year-round gas air conditioning. Mr. Wepfer, who already has assumed duties, will soon establish a national

sales office for the corporation in Little Rock. Prior to opening this office, he is contacting gas utilities and other prospects for sales in all sections of the country. He is also directing a series of sales schools at the Arkla plant in Evansville, Ind.

Mr. Stephens' office remains at Little Rock, Ark. General offices of the company, which distributes natural gas to over 260,000 customers in 168 communities in Arkansas, Louisiana and Texas, are in Shreveport, La.

Mr. Stephens became chairman of the board of directors of the gas company on Jan. 1, 1957. At that time he resigned as president and director of W. R. Stephens Investment Co., Inc., Little Rock, to assume his new duties. He was elected to the ALG board on Nov. 30, 1956, to become effective when he assumed chairmanship.

His business career began as a commission salesman of belt buckles, and later he trained salesmen for the buckle manufacturer for whom he worked. He worked for three months in a Little Rock brokerage firm, then in 1934 established his own company. The firm, now Stephens, Inc., is active in the bond field, handling municipal, school and other public issues.

Mr. Stephens' entry into the utility field came several years ago when his company purchased the Ft. Smith Gas Corp., at Ft. Smith, Ark. In the fall of 1954 the Stephens company acquired the majority common stock of ALG from Cities Service Co. The Stephens

firm has since disposed of its majority holding of stock to the public.

Mr. Weir was elected vice-president of the company in May 1957, and later in the year when ALG acquired the year-round air conditioning division of Servel, Inc., Evansville, Ind., he was elected a director and vice-president for operations of Arkla Air Conditioning Corp. Mr. Weir is a graduate of the University of Oklahoma. He first was employed by the company as a junior engineer in 1935. He worked in budget, tax and insurance departments until 1946, when he was appointed assistant personnel manager for the Arkansas Natural Companies, of which ALG was a subsidiary. In 1953, after ALG became an independent company, he was appointed personnel manager. In 1956 he was appointed assistant to J. C. Hamilton.

Mr. Hatchett is a graduate of Arkansas State Teachers College. A former Little Rock businessman and state police director for Arkansas (1953-54), Mr. Hatchett joined ALG in 1955 as safety engineer for the Arkansas division. He became an executive on special assignments in March 1956.

Mr. Hatchett recently was elected president of a new ALG subsidiary, Pitts & Bryant Co., Inc., a pipeline and utility construction company with headquarters at Clarksville, Ark., and Lafayette, La.

Mr. Wepfer operated his own business as a manufacturer's representative before joining Arkla.

McDonald retires as Public Service chairman, Luce now chief officer

LYLE McDONALD, chairman of the board of directors of Public Service Electric and Gas Co., retired from that position on Feb. 1 after 42 years with the company.

He will continue as a member of the board of directors.

Upon his retirement, Donald C. Luce, president, became the chief executive officer of the company.

The board of directors elected Francis A. Keane vice-president in charge of finance, effective Feb. 1. Mr. Keane was a vice-president and a director of the company.

Mr. McDonald, who started with Public Service in 1916 as an accountant, has been a director since 1944 and chairman of the board of directors since 1954. He has held various executive positions in the company,

having become comptroller in 1937, vice-president and comptroller seven years later and vice-president in charge of finance in 1948, the post he held at the time of his election to chairman of the board of directors. He is a graduate of New York University.

Mr. McDonald has been active in affairs of the American Gas Association and other utility groups.

Campion secretary

ROBERT T. CAMPION has been named secretary of The Siegler Corp. Mr. Campion will be headquartered in the executive offices of Siegler in Anaheim, Calif. Mr. Campion attended Loyola University of Chicago and in 1941 joined Alexander Grant & Co., certified public accountants. He became a partner in that firm in 1954.

Consumers Power elects four executives

ALPHONSE H. AYMOND JR. has been elected executive vice-president in charge of legal, accounting, and gas matters for Consumers Power Co. Robert P. Briggs continues as executive vice-president in charge of corporate, financial and related matters.

Mr. Aymond was formerly vice-president and general counsel. He will be succeeded as general counsel by Harold P. Graves, for-

merly general attorney for the company.

Birum G. Campbell, former division manager at Kalamazoo, has been elected vice-president of sales and business promotion.

John B. Simpson has been elected vice-president in charge of gas operations, succeeding Donald E. Herringshaw, who has resigned. Mr. Simpson was formerly general supervisor of gas operations.

Long succeeds Boyer

HENRY J. LONG has been appointed manager of the gas department of the Philadelphia Electric Co., succeeding E. J. Boyer who has retired. Mr. Long will be responsible for gas production and distribution in the suburban Philadelphia area served by the utility. He joined the utility in 1927, following his graduation from Penn State University as a mechanical engineer. He is a past president of the Pennsylvania Gas Association and the Society of Gas Operators, and a member of the American Gas Association.

New Haven names Fitzsimmons, Manley

WILLIAM A. FITZSIMMONS has been named as vice-president and Clarence C. Manley as secretary and treasurer of the New Haven Gas Co.

Mr. Manley succeeds Theodore R. Sucher, who died Dec. 17. Mr. Sucher, who was secretary, treasurer and a director at the time of his death, had been associated with the company for nearly 55 years.

Mr. Fitzsimmons was graduated from the Carnegie Institute of Technology and joined

the company as a cadet engineer in 1924. He has held the positions of superintendent of production, assistant engineer, and in 1942 was made engineer.

Mr. Manley, a graduate of Connecticut College of Commerce, started with the company as a clerk in the distribution department in 1930 and was transferred to the accounting department in 1934. Prior to his present position he was assistant secretary, assistant treasurer and general auditor of the company.

Consumers Power names Simpson, Fruechtenicht, Hedges, Bunnell

DONALD E. HERRINGSHAW, vice-president in charge of gas operations, Consumers Power Co., resigned Jan. 1 under the company's retirement program to enter private business. He has been succeeded by John B. Simpson, who has been general supervisor of gas operations for the company. In addition, he has been elected a vice-president of a subsidiary, Michigan Gas Storage Co., also succeeding Mr. Herringshaw.

Herman L. Fruechtenicht, who has been general superintendent of the Michigan Gas Storage Co., has been promoted to the position of director of gas procurement and development for Consumers Power Co., a new position. He has been succeeded by Eugene B. Hedges as general superintendent.

Mr. Simpson has been succeeded as general

gas operations supervisor by Fred H. Bunnell, formerly general supervisor of gas distribution.

John B. Simpson was graduated from the Massachusetts Institute of Technology in 1940 with a B.S. degree in petroleum engineering. He joined Consumers as a junior engineer in the gas department in 1946, went to Michigan Gas Storage as engineer in 1947, became assistant general superintendent of the storage company in 1951, and returned to Consumers as assistant general supervisor of gas operations in 1952.

Herman L. Fruechtenicht is an engineering graduate of the University of Louisville. He joined Consumers in 1931 and became natural gas production and transmission superintendent in 1943. When Michigan Gas Storage

was formed in 1946 to operate facilities for the transmission and storage of natural gas brought into Michigan from Texas and other states, he transferred to the subsidiary company as general superintendent.

Fred H. Bunnell received a mechanical engineering degree from Michigan State in 1923 and went to work for a gas company in Lansing that later was acquired by Consumers. He became assistant superintendent of gas distribution for the Consumers Lansing Division in 1936. In 1942 he was transferred to the general offices in Jackson and in 1944 appointed general supervisor of gas distribution. After private study, he was admitted to the practice of law in 1938.

All three men are active in the American Gas Association.

PGW names Hubbard director of administration, Paul to industrial post

EDWARD F. HUBBARD has been appointed director of administration of Philadelphia Gas Works, to succeed Howard H. Hessler who has left active service in anticipation of retirement. At the same time, PGW named Walter P. Paul director of industrial relations to succeed Mr. Hubbard.

For two years Mr. Hubbard has been assistant director of administration and also director of industrial relations. He is a member of the Philadelphia Gas Works Management Committee, the Operations Committee, and the company's executive staff. Mr. Hubbard started with PGW in 1939 as a

personnel records clerk and three years later became an interviewer. He became assistant manager of the personnel department in 1947 and in 1948 was named industrial relations director.

He is chairman of the A. G. A. Personnel Committee. He also is a member of the Pennsylvania Gas Association and has served as chairman of its Personnel Committee.

Mr. Paul began his PGW career as an engineer assistant in 1946. In his new job as director of industrial relations becomes a member of the Management Committee and the executive staff. Mr. Paul went to the

industrial relations department from the position of assistant superintendent at PGW's Station B. During his service there, he worked as assistant foreman, generator house, and later became foreman before transferring to the power plant as assistant power plant engineer. He became assistant superintendent of Station B in 1953.

He also is a member of the American Gas Association and is chairman of the Pennsylvania Gas Association's Personnel Committee. He received a B.S. in chemical engineering at the University of Delaware and a B.S. in business administration from Rutgers.

Wisconsin promotes Phenicie, Schaars, upon Boulet's retirement

R. E. PHENICIE was promoted to personnel director and A. H. Schaars to personnel administrator of the Wisconsin Public Service Corp. The appointments were made as a result of the retirement of C. B. Boulet, vice-president—personnel, after 36 years of service.

About 160 persons were present at a special gathering honoring Mr. Boulet upon his retirement. Mr. Boulet has played an important role in safety work, and in pioneering employee benefits now generally accepted throughout the industry; he pioneered one of the nation's first guaranteed wage plans.

Before joining the utility in 1921, he was principal of a school in Laona, Wisc. In

1923, he was transferred from the utility's Green Bay office to Milwaukee, where he handled accounting, insurance, safety, and personnel matters. In 1939, he was made manager of insurance and safety, and director of personnel. His office was moved to Green Bay in 1949, and he was made vice-president—personnel in 1954. Mr. Boulet has lectured on safety throughout the country, and has co-authored an industrial safety textbook which is used in many universities.

Mr. Phenicie received a B.A. degree from Lawrence College in 1931 and performed graduate work at the University of Wisconsin. He joined Public Service in 1933, and except

for short periods in Sheboygan and Wausau, spent most of his time in the personnel department in Green Bay. He has served on committees of the American Gas Association and the Wisconsin Utilities Association.

Mr. Schaars was graduated from the University of Wisconsin with a B.A. degree in commerce in 1928. Following graduation, he joined Public Service as an accountant in Menominee, Michigan. In 1929, he was transferred to Milwaukee as field auditor, and in 1943 was transferred to Green Bay as assistant to the personnel director. Mr. Schaars has also served on committees of A. G. A. and the Wisconsin Utilities Association.

Lydick PR director

FRANK J. LYDICK has been appointed public relations director of The Peoples Natural Gas Co., Pittsburgh. He will be responsible for the company's over-all public and community relations programs. Mr. Lydick was graduated from the University of Pittsburgh in 1942 with a BS degree in petroleum and natural gas engineering. In 1945 he joined the Gulf Research and Development company as a research engineer. From 1951 to the present, he has had technical publicity responsibility for a number of Westinghouse product and service divisions and had handled other special public relations assignments.

Walker promoted

JAMES L. WALKER has been appointed operating manager of Arkansas Western Gas Co., with charge of Arkansas Western's operations and safety program. Mr. Walker attended the University of Arkansas and Texas A & I College, where he majored in natural gas engineering. He has been employed by the Fort Smith Gas Co., and by the Panhandle Eastern Pipe Line Co. as a transmission inspector. He joined Arkansas Western in 1946 as an assistant engineer. In 1948 he was promoted to assistant operating manager.

He continues to hold the position of safety director.

Schultz manager

A. M. SCHULTZ, former domestic sales manager of Minneapolis Gas Co., has been appointed manager of sales and service for Quebec Natural Gas Corp. at Montreal. Mr. Schultz has been a sales executive of the Minneapolis utility since 1944, and was awarded the 1955 Mair Trophy as "Outstanding Sales Manager" in that city. He is a member of both the Canadian and American Gas Associations, and has been active for many years in the Midwest Regional Gas Sales Council. He attended the School of Business Administration at Marquette University and the post-graduate school at Rutgers.

Jones president of Cascade Natural Gas



O. M. Jones

OWEN MARSHALL JONES, vice-president, finance, and treasurer of Cascade Natural Gas Corp., assumed the duties of president on Jan. 1. C. Spencer Clark resigned as president and resumed his former duties as chairman of the board of directors.

Mr. Jones joined the company a year ago

as vice-president, finance. He is a Seattle business executive with extensive experience in manufacturing and accounting.

For a period of nine years before joining Cascade he was controller, and then treasurer of a group of Pacific Northwest companies operating as Asbestos Supply Co. and Vermiculite Northwest, Inc., manufacturers and distributors of specialty building products.

Mr. Jones was graduated magna cum laude from the University of Washington in 1940. He is a certified public accountant and a member of the Controllers Institute of America.

Hart president

FDONALD HART, formerly executive vice-president of Temco, Inc., has been elected president of the Nashville Corp. Mr. Hart has been with Temco since 1944. Previous to that time he was associated with the du Pont Co. for seven years. He joined Temco as an industrial engineer. In 1945 he was named vice-president in charge of engineering, and four years later became executive vice-president. W. Bratten Evans, formerly president and now chairman of the board, also announced the election of Robert N. Smith as first vice-president and treasurer. Mr. Smith formerly served as vice-president and treasurer.

Names in the news—a roundup of promotions and appointments

UTILITY

Wilmot O. Smith, who joined Long Island Lighting Co. in 1923, has been elected vice-president in charge of gas and electric sales. He was formerly assistant vice-president and electric operating manager. The utility also announces that Charles E. Elbert, secretary, has taken on additional duties as assistant to the president.

Two assistant comptrollers have been elected at New York State Electric & Gas Corp. They are Charles W. Kelsey, with the company since 1923, who will be responsible for the supervision of general accounting, and Stuart A. Cole, with the company since 1926, who will be responsible for the supervision of customer accounting.

New director of advertising and media services at Cincinnati Gas & Electric Co. is Jerry Hurter. Mr. Hurter was associated with the *Cincinnati Times Star* for the past 30 years.

J. Randolph Buck has joined Northern Natural Gas Co. as senior reserves engineer in the reserves and availability section of the gas supply department. He has had about 20 years of experience in the petroleum industry.

Promotion of Richard Bishop to general supervisor of gas distribution for Consumers Power Co. has been announced. He succeeds Fred H. Bunnell, who recently was named general gas operations supervisor.

Five Michigan Consolidated Gas Co. men have been appointed to new posts. They are: Robert B. Allen, superintendent of the street department, who has been named assistant manager of operations; Robert C. Barfknecht, who succeeds Mr. Allen; Robert W. Cornwell, general foreman of the street department, who succeeds Mr. Barfknecht as assistant superintendent of the street department; Hans T. Thomson, district foreman, who succeeds Mr. Cornwell; and Clifford A. Mogt, who was appointed superintendent of operations staff of the company.

New superintendent of Pacific Gas & Electric Co.'s East Bay division is Chris H. Pedersen. He succeeds Thomas P. Jenkins, who was appointed manager of the Humboldt division. John Bianucci, now division gas engineer of the East Bay division, will

succeed Mr. Pedersen as gas superintendent at Stockton.

Elis Petersen, North Shore Gas Co., has been named to the newly created post of superintendent of purchasing. He has been with North Shore since 1918.

Appointment of Charles A. Sweningsen as manager of a newly activated construction department of Southern Counties Gas Co. has been announced. Also promoted as part of the move were John McCollum, as supervisor, construction procedures, and Frank Messersmith as supervisor, construction quality.

Joseph M. Clark has been appointed to the department of geology and production at Arkansas Western Gas Co.

Peoples Natural Gas Co. reports that Guy E. McAlister has been promoted to office manager and Theodore W. Laub has been promoted to budget manager.

R. B. Fick, industrial development coordinator for Wisconsin Public Service Corp., has been elected to the board of the Great Lakes Industrial Development Council.

PIPELINE

Frank Ramsey has been appointed manager of Texas Gas Transmission Corp.'s Wilmot compressor station. He replaces George F. Mosby, who retired last month.

MANUFACTURERS

Thomas J. Ross, senior partner in the public relations firm of Ivy Lee and T. J. Ross, has been elected to the board of Rheem Manufacturing Co. He is filling a vacancy created by the retirement of D. L. Rheem, one of the founders of the company.

Appointed to the newly created post of vice-president of marketing for Robertshaw-Fulton Controls Co. is A. W. Beck. He will assist and support marketing activities of the company's six manufacturing divisions.

New vice-president of Hupp Corp. is Anthony J. DeFino, formerly vice-president and general manager of the air conditioning division of Servel.

Dresser Industries announces that R. E. Reimer and John Lawrence have been appointed executive vice-presidents; Mr.

Reimer will continue as treasurer. In addition, Thomas L. Moody was appointed vice-president in charge of industrial relations. J. Douglas Mayson succeeded Mr. Reimer as secretary, and Cecil C. Hill and Paul E. Brodrick were appointed assistant treasurers.

Mueller Co. of Decatur, Ill., announces the appointment of Dan R. Gannon to general sales manager.

Norb Hughes, director of sales for Lincoln Brass Works, last month became vice-president—director of sales.

The Oil City, Pa., works of Worthington Corp. has been reorganized as the Oil City division. William F. Weinreich has been named as its general manager.

Surface Combustion Corp. announces the promotions of four men in its Toledo plant. They are: S. C. Surratt, to product engineer, standard equipment division; R. F. Pomeroy, to product engineer, ferrous heat treat equipment; W. A. Phillips, to product engineer, non-ferrous equipment; and W. F. Parker, to assistant product engineer, non-ferrous equipment.

Walter W. Braatz has been appointed to the newly created post of supervisor of quality control at Mueller Climatrol, division of Worthington Corp.

At Rockwell Manufacturing Co., Nelson E. Davenport, assistant to the vice-president of sales, meter and valve division, has been named export sales manager—meter and valve products. Walter G. George, assistant export manager, Delta power tools, has been named export sales manager—power tools and municipal products.

John P. Mitchel has been named Maytag regional manager for Dade and Monroe Counties in Florida.

New manager of the American Meter Co. plant in Wyalusing, Pa., is Pierce W. Butler Jr.

OTHER

Roland A. Whealy has been appointed refining technologist in the Office of Oil and Gas, Department of the Interior. He will be responsible for programs involving refining, synthetic fuels, and natural gasoline.

New assistant office manager at the American Gas Association is Carmine Veltri.

Industrial relations

(Continued from page 16)

faith, constituted an unlawful refusal to bargain.

The Board saw a difference between a "no-strike" clause, which it considers to be a bargainable subject, and the employer's strike ballot proposal. It said that under a no-strike clause, the employer admits the union's right to strike but, in the give and take of bargaining, gets the union to waive that right. Whereas, according to the Board, the strike ballot proposal was an attempt to go behind the union in order to bargain with the employees themselves. Such conduct, it felt, was in derogation of the union's statutory position as exclusive bargaining agent.

Contrary to the Board, the court held that the strike vote proposal fell within the statutory subjects of bargaining about which the employer had a right to bargain in good faith. In the court's opinion, "the bargaining area of the Act has no well defined boundaries; the phrase 'conditions of employment' has not acquired any precise mean-

ing." On the contrary, the area of compulsory collective bargaining is obviously an expanding one, it said. Management and labor are not being required to bargain about issues which formerly were not considered as proper issues for inclusion in the usual collective bargaining agreement.

Nor did the court consider the strike ballot proposal as an attempt to go behind the designated representative in order to bargain with the employees themselves. It noted that the employer recognized and bargained with the union, not the employees, and that any requirement that the employees approve the action of the union would be the result of an agreement with the union to that effect.

The fact that non-union employees were to have a vote in the strike referendum did not alter the legality of the proposal according to the court. It distinguished the present case from one in which an employer was ruled to have withheld recognition from the union by insisting that non-union employees have the right to vote upon the provisions of the contract negotiated by the union (*NLRB v. Corsicana Cotton Mills*).

C. E. Dunahoo, San Diego Gas & Electric Co., San Diego, Calif.

J. R. Elliott, Pacific Lighting Gas Supply Co., Los Angeles, Calif.

Frank J. Ervin, Pacific Gas & Electric Co., San Francisco, Calif.

W. O. Feierabend, Southern California Gas Co., Los Angeles, Calif.

R. C. Fish, Pacific Northwest Pipeline Co., Salt Lake City, Utah.

Walter Funabiki, Pacific Gas & Electric Co., San Francisco, Calif.

Charles R. Garrett, Pacific Gas & Electric Co., So. San Francisco, Calif.

Don E. Gentry, Pacific Lighting Gas Supply Co., Los Angeles, Calif.

H. H. George, Tube Turns, Louisville, Ky.
Robert L. Gollnick, Ralph E. Davis, Consultant, Houston, Texas.

Richard K. Groff, Southern Union Gas Co., Dallas, Texas.

J. D. Hampton, Pacific Lighting Gas Supply Co., Los Angeles, Calif.

A. Gordon Hanau, Consolidated Natural Gas Co., New York, N. Y.

Joseph R. Haney, Pacific Gas & Electric Co., Oakland, Calif.

Herbert R. Hazeldine, Eastern Gas Board, Westminster, England.

John F. Hickey, Jr., Pacific Gas & Electric Co., San Francisco, Calif.

Lucile A. Howell, Tennessee Gas Co., Div. United Gas Co., Morristown, Tenn.

Bob T. H. Hulse, The Chase Manhattan Bank, New York, N. Y.

E. J. Hunter, Jr., Southern California Gas Co., Los Angeles, Calif.

L. W. J. Jones, Mountain Fuel Supply Co., Rock Springs, Wyo.

Richard Jones, Pacific Gas & Electric Co., Oakland, Calif.

John R. Judd, Utility Realization Corp., Philadelphia, Pa.

John C. Kaltschnee, Gas Consumers Serv-



1958

MAY

4-7 •LPGA Annual Meeting, Conrad Hilton Hotel, Chicago, Ill.

4-7 •Air Conditioning and Refrigeration Institute, Annual Meeting, The Homestead, Hot Springs, Va.

5-9 •Distribution, Production and Transmission Conference, Roosevelt and Commodore Hotels, New York City.

5-9 •National Restaurant Association Convention and Exposition, Navy Pier, Chicago, Ill. (A. G. A. will exhibit).

6-7 •PCGA Technical Section Transmission Conference, San Diego, Calif.

12-13 •A. G. A. Eastern Gas Sales Conference, Park Sheraton Hotel, New York City.

18-21 •Industrial Heating Equipment Association, The Homestead, Hot Springs, Va.

19-21 •A. G. A. Midwestern Gas Sales Conference, Edgewater Beach Hotel, Chicago, Ill.

19-23 •Annual Foundry Congress and Show, Cleveland, Ohio (A. G. A. will exhibit).

20-21 •PCGA Technical Section Customer Service Conference, Seattle, Wash.

20-22 •Pennsylvania Gas Association, Annual Meeting, Pocono Manor Inn, Pocono Manor, Pa.

JUNE

3-4 •A. G. A.-PCGA Research and Utilization Conference, Los Angeles, Calif.

23-24 •Michigan Gas Association, Grand Hotel, Mackinac Island, Mich.

24-27 •Canadian Gas Association, Annual Meeting, Manoir Richelieu Hotel, Murray Bay, Que., Can.

JULY

7-11 •National Housewares and Home Appliance Manufacturers Exhibits, Auditorium, Atlantic City, N. J.

SEPTEMBER

3 •Pacific Coast Gas Association, Annual Meeting, Benson and Multnomah Hotels, Portland, Ore.

5 •New Jersey Gas Association, Annual Meeting, Spring Lake, N. J.

17-19 •Southeastern Gas Association, Annual Meeting, Sir Walter Hotel, Raleigh, N. C.

New A.G.A. members

Gas Companies

Vancouver Island Gas Co., Ltd., Nanaimo, B. C. (R. M. Bond, Gen. Mgr.)

Individual Members

C. W. Ade, Mississippi River Fuel Corp., St. Louis, Mo.

Frank W. Allum, North Eastern Gas Board, Leeds, England.

Elmer G. Ames, Pacific Gas & Electric Co., Marysville, Calif.

Edward Ax, Gas Consumers Service, Long Island City, N. Y.

Harry L. Baker, Jr., Magnolia Petroleum Co., Dallas, Texas.

Frank A. Bewley, Pacific Gas & Electric Co., Felton, Calif.

Roy L. Bishop, Magic Gas & Appliance Co., Eugene, Ore.

John C. Black, Southern California Gas Co., Whittier, Calif.

D. W. Byrne, Rockwell Manufacturing Co., Glendale, Ariz.

Robert F. Cleary, Pacific Gas & Electric Co., San Francisco, Calif.

W. C. Cooper, Pacific Gas & Electric Co., Oakland, Calif.

R. J. Corbeil, Southern California Gas Co., Los Angeles, Calif.

J. W. Cowan, Southern California Gas Co., Los Angeles, Calif.

O. L. Cox, Miller, Kuhrt, & Cox, Los Angeles, Calif.

Warren D. Crawford, Mueller Co., Los Angeles, Calif.

Roy C. Culbertson, Jr., Pacific Gas & Electric Co., El Cerrito, Calif.

Ralph E. Davis, Jr., Ralph E. Davis, Consultant, Houston, Texas.

Lewis H. Dietz, Prat-Daniel Corp., Palm Springs, Calif.

Personnel service

SERVICES OFFERED

Pakistani wishes position as apprentice to learn of United States natural gas company operations. Educated at the University of Punjab with courses in Gas Technology, Westminster Technical College, London. Available after June 1958. 1884.

Canadian Manufacturers' Agent—with over 25 years of sales and managerial experience in the Canadian gas appliance manufacturing field, wishes to contact component parts or major appliances manufacturers interested in establishing or improving their present operations in Canada. Also interested in gas equipment. 1896.

Sales—30 years' experience including 15 years' direct plumber-dealer and merchandising utility sales with one company in New York Metropolitan area and 15 years in supervising sales covering northeast area for company recently in automatic heater and tank business. Prefer New York as home base, will travel. 1897.

Manager—in Midwest or Northwest area, for small and medium size gas operation, or department head for large gas operation. Experience covers eight years in top management and 14 years of supervision in production, distribution and service with manufactured, mixed, and natural gases. 1898.

Gas Operating Engineer—ten years' experience with working knowledge of gas transmission, distribution and utilization; familiar with accounting, rates, appliance sales. Also familiar with electric operation. Desire position as manager or similar position requiring operating experience. (37) 1899.

Citizen of the Netherlands wishes to immigrate to the United States. 13 years' experience in the gas industry. After service with the Dutch army as a volunteer, began his gas industry career at the gas distribution department of the municipal energy works at Rotterdam. He was charged with laying of services, gas meter installation, installation and repair of gas appliances, regulators and governors. Between 1950 and the present, he held the following positions: foreman gas fitter; assistant supervisor; in charge of drawings as service card-index, industrial appliances and planning. As

technician at Delft municipal energy works he has supervision of the fitting section, industrial gas service, planning and controlling the execution of new projects. Married, 2 children. (33) 1900.

Manager-Purchasing Agent—experience in all phases of the gas industry, manufactured, mixed, propane-air, natural. And have been instrumental in the starting of propane operations in domestic, commercial and industrial levels in conjunction with the utility operations. 1901.

Mechanical Engineer—professional license, 13 years' experience; design and construction of water, oil and natural gas plants, compressor stations and pipelines, steam and Diesel power, heating, air conditioning and refrigeration facilities, metallurgical and chemical plants. Desire position at project level for economic analysis and feasibility studies, design and plant betterment. 1902.

Secretary (Woman)—to president of gas utility desires change. Fully conversant with company procedure. Interview New York City. 1904.

Sales Manager—recently associated with Servel, Inc. in a management capacity, available only because of elimination of field selling organization. Twenty years experience at factory level with top name companies. Strong utility background, basically trained in retail work with Philadelphia combination property. Broad experience in the appliance business, with good contacts in Eastern U. S. Engineering background. Salary desired \$10,000. 1905.

Economic and Operational Analysis of business data. Solid experience in analysis, synthesis, and interpretation of data, and design of electronic data processing systems. Supervisory responsibility, M.A. in Economics. 1906.

Young Engineer—B.S.C.E., desires a career position with a company located in Metropolitan area. Veteran, married. 1907.

General Superintendent—20 years' experience in gas utility operations, last 12 in natural gas distributions and operations. Interested in affiliating with a natural gas company. College graduate, married, one child. Details upon request. Age 43. 1908.

Economist, Market Analyst, Executive—consultant with wide business, association and gov-

ernment experience in construction, forecasts, planning, statistics, systems, procedures and methods. 1909.

Advertising and Marketing Director—over 25 years experience in all phases of planning, budgeting, producing, and presenting national programs on consumer durable goods. Background includes department store buying and merchandising; promotion manager for marketing company selling through 30,000 outlets; market research manager; account executive; vice-president for advertising. Harvard Business School. Married, 2 children. 1910.

Sales and Advertising Manager—and his assistant, with long successful service with prominent 100,000 meter natural gas utility in the North fully experienced on active merchandising direct to customer with dealer cooperation. Wish to make connection with gas utility or manufacturer in Florida. 1911.

POSITIONS OPEN

Young Engineers—Philadelphia utility with divisions in Eastern Pennsylvania can use three recent engineering graduates. Will be given groundwork in all departments of company before regular assignment. In reply please state age, education, experience—if any. 089.

Engineers—Philadelphia utility can use two engineers experienced in gas distribution. Please state age, education, experience and other background information in replying. 085.

Technical Services Representative—exceptional opportunity. Manufacturer of water heaters, furnaces and air conditioners needs man for Product Service Division in Chicago. Position calls for all-around man to train company and customer salesmen, handle correspondence, bulletins, manuals and application problems. Applicant should be 28 to 40 and have sales or engineering background. Limited travel. 088.

Manager Gas Property New England—nation-wide company has challenging opening for progressive sales minded manager for manufactured and bottled gas utility serving a community of approximately 35,000. Send complete resume of experience. 0860.

ice, St. Louis, Mo.

George Kestner, Pacific Gas & Electric Co., San Francisco, Calif.

R. B. Kitzmiller, Rockwell Manufacturing Co., Los Angeles, Calif.

H. T. Knapp, Pacific Gas & Electric Co., Hayward, Calif.

C. A. Lee, Pacific Gas & Electric Co., Stockton, Calif.

C. H. Lekberg, Chicago Heights, Ill.

Stanley Lew, Southern California Gas Co., Los Angeles, Calif.

Elliot H. Lewis, Pacific Gas & Electric Co., Albany, Calif.

A. W. Low, Pacific Lighting Gas Supply Co., Los Angeles, Calif.

H. H. Lowry, Columbia-Geneva Steel Div., Portland, Ore.

F. D. MacDonald, Pacific Gas & Electric Co., Mill Valley, Calif.

Donald K. Madison, San Diego Gas & Electric Co., San Diego, Calif.

C. Wade McCoy, Lakeland Natural Gas Ltd., Kingston, Ont., Can.

Robert F. McGinn, A. O. Smith Corp., Milwaukee, Wisconsin.

R. S. McNeil, The San Paulo Gas Co., Ltd., San Paulo, Brazil.

Elizabeth C. Meggis, Lennen & Newell, Inc., Beverly Hills, Calif.

Jack L. Mohr, Philadelphia Gas Works Div. of U.G.I., Philadelphia, Pa.

George Noll, Southern California Gas Co., Los Angeles, Calif.

Norman A. Olansen, The Chase Manhattan Bank, New York, N. Y.

A. V. Plimpton, Pacific Gas & Electric Co., Willows, Calif.

Donald T. Quinn, Texas Eastern Transmission Corp., Shreveport, La.

S. E. Register, Pacific Telephone & Telegraph, Los Angeles, Calif.

J. W. Rimmer, Columbia-Geneva Steel Div., U. S. Steel Corp., Portland, Ore.

E. Paul Robinet, Cameron Engineering Co., San Francisco, Calif.

Herbert E. Ryerson, Iowa-Illinois Gas & Electric Co., Davenport, Iowa.

James F. Shuck, Van Nuys, Calif.

R. L. Simmonds, Pacific Gas & Electric Co., Oakland, Calif.

Harold W. Simpson, Mountain Fuel Supply Co., Salt Lake City, Utah.

P. G. Slachman, Kern County Land Co., San Francisco, Calif.

Emory R. Smith, Pacific Gas & Electric Co., Oakland, Calif.

J. E. Smith, San Diego Gas & Electric Co., San Diego, Calif.

E. Snook, City of Moses Lake, Moses Lake, Wash.

M. G. Soggee, Minneapolis-Honeywell Regulator Co., Gardena, Calif.

W. O. Stratton, San Diego Gas & Electric Co., Chula Vista, Calif.

J. T. Theys, Pacific Lighting Gas Supply Co., Los Angeles, Calif.

Henry Thorn, Pacific Gas & Electric Co., San Rafael, Calif.

A. H. Thornall, Pacific Gas & Electric Co., Orland, Calif.

A. Tudor, Arizona Public Service Co., Phoenix, Ariz.

R. W. Twigg, McCann-Erickson, Inc., Los Angeles, Calif.

James Van Buskirk, A. O. Smith Corp., Oakland, Calif.

R. Vezina, Quebec Natural Gas Corp., Montreal, Que., Canada.

F. H. Wehrman, Grove Valve & Regulator Co., Los Angeles, Calif.

R. L. Weil, Pacific Lighting Gas Supply Co., Los Angeles, Calif.

Roy E. Wetter, Pacific Gas & Electric Co., San Francisco, Calif.

Frank T. Zitzo, Portland Gas & Coke Co., Portland, Ore.

A.G.A. advisory council

E. R. ACKER.....Poughkeepsie, N. Y.
 B. C. ADAMS.....Kansas City, Mo.
 F. M. BANKS.....Los Angeles, Calif.
 L. L. BAXTER.....Fayetteville, Ark.
 LESLIE A. BRANDT.....Chicago, Ill.
 DUDLEY B. W. BROWN...New York, N. Y.
 WENDELL C. DAVIS.....Chicago, Ill.
 J. ROBERT DELANEY.....Cincinnati, Ohio
 J. F. DONNELLY SR.....Milwaukee, Wis.
 E. H. EACKER.....Boston, Mass.
 W. M. ELMER.....Owensboro, Ky.
 N. HENRY GELLERT.....Seattle, Wash.
 ELISHA GRAY.....St. Joseph, Mich.
 LYLE C. HARVEY.....Syracuse, N. Y.
 FREDERIC O. HESS.....Dresher, Pa.
 J. E. HEYKE.....Brooklyn, N. Y.
 J. K. HORTON.....Calgary, Alta.
 OAKAH L. JONES.....Toronto, Ont.
 D. E. KARN.....Jackson, Mich.
 PAUL KAYSER.....El Paso, Texas
 GROVE LAWRENCE.....Los Angeles, Calif.
 WISTER H. LIGON.....Nashville, Tenn.
 A. W. LUNDSTRUM.....Columbus, Ohio
 WILLIAM G. MAGUIRE...New York, N. Y.
 N. H. MALLON.....Dallas, Texas
 DEAN H. MITCHELL.....Hammond, Ind.
 W. E. MUELLER...Colorado Springs, Colo.
 GERALD T. MULLIN...Minneapolis, Minn.
 E. A. NORMAN.....Columbus, Ohio
 F. T. PARKS.....Denver, Colo.
 L. B. RICHARDS.....Harrisburg, Pa.
 W. F. ROCKWELL JR.....Pittsburgh, Pa.
 FRANK C. SMITH.....Houston, Texas
 E. CARL SORBY.....Rockford, Ill.
 N. R. SUTHERLAND...San Francisco, Calif.
 W. D. SWEETMAN.....Chicago, Ill.
 R. G. TABER.....Atlanta, Ga.
 GEORGE E. WHITWELL...Philadelphia, Pa.
 W. D. WILLIAMS.....Asbury Park, N. J.
 CHARLES G. YOUNG...Springfield, Mass.

PAR COMMITTEE

Chairman—Wister H. Ligon, Nashville Gas Co., Nashville, Tenn.

General Promotional Planning Committee

Chairman—Charles G. Barndt, Lone Star Gas Co., Dallas, Texas.

General Research Planning Committee

Chairman—E. H. Smoker, United Gas Improvement Co., Philadelphia, Pa.

General Public Information Planning Committee

Chairman—Thomas H. Evans, Equitable Gas Co., Pittsburgh, Pa.

FINANCE COMMITTEE

Chairman—E. R. Acker, Central Hudson Gas & Electric Corp., Poughkeepsie, N. Y.

LABORATORIES MANAGING COMMITTEE

Chairman—N. B. Bertollette, The Hartford Gas Co., Hartford, Conn.

APPROVAL REQUIREMENTS COMMITTEE

Chairman—H. B. Noyes, Washington Gas Light Co., Washington, D. C.

Associated organizations

GAS APPLIANCE MANUFACTURERS ASSOCIATION

Pres.—Clifford V. Coons, Rheem Manufacturing Co., New York, N. Y.
 Man. Dir.—Harold Massey, 60 East 42nd St., New York 17, N. Y.

CANADIAN GAS ASSOCIATION

Pres.—H. C. Darroch, Moffats, Ltd., Weston, Ontario.
 Man. Dir.—W. H. Dalton, 6 Hayden St., Toronto 5, Ontario.

FLORIDA-GEORGIA GAS ASSOCIATION

Chrmn.—Joseph Frink, Florida Power & Light Co., Miami, Fla.
 Sec.-Tr.—L. A. Friederick, Tampa Gas Co., P.O. Box 2562, Tampa, Fla.

ILLINOIS PUBLIC UTILITIES ASSOCIATION

Sec.-Tr.—T. A. Schlink, Central Illinois Light Co., 316 South Jefferson Ave., Peoria, Ill.

INDIANA GAS ASSOCIATION

Pres.—Lyman H. Bell, Hoosier Gas Corp., Vincennes, Ind.
 Sec.-Tr.—R. A. Steele, Citizens Gas & Coke Utility, 2020 N. Meridian St., Indianapolis, Ind.

THE MARYLAND UTILITIES ASSOCIATION

Pres.—Robert W. Wilson, Potomac Electric Power Co., Washington, D. C.
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